Journal of THE AMERICAN DIETETIC ASSOCIATION

VOL. 30, NO. 7

July 1954

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Treating Obesity in Children

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37th A.D.A. Annual Meeting, Philadelphia, October 26–29, 1954

PUBLISHED BY *The American Dietetic Association*

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NUMBER 7

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The Journal of the American Dietetic Association is published monthly by The American Dietetic Association, Mt. Royal & Guilford Aves., Baltimore 2, Md., and 620 N. Michigan Ave., Chicago 11, Ill. Neither the Association nor the Editor assumes responsibility for the opinions expressed by authors of papers abstracted, quoted, or published in full in this Journal.

Subscription Rates: $6 per year in advance in the U. S., Canada, and countries of the Postal Union; all other countries, $7 per year in advance. Special rate to undergraduate students and dietetic interns in approved internships, $2 per year in advance, if order is approved by head of the department. Single copies 75 cents in advance. All correspondence concerning Journal subscriptions, orders for copies or reprints from the Journal, and notices of change of address should be sent to The American Dietetic Association, Mt. Royal & Guilford Aves., Baltimore 2, Md., or preferably 620 N. Michigan Ave., Chicago 11, Ill. Notices regarding change of address should reach the publisher by the *23rd of the month before the date of issue* on which the change is to take effect and both old and new addresses must be given. Claims for Journals lost in the mail will not be entertained more than six months after the date of the issue involved.

Editorial Correspondence: All articles and notices for publication, general correspondence, and inquiries should be sent to the Editor at The American Dietetic Association, 620 N. Michigan Ave., Chicago 11, Ill. Manuscripts are accepted for publication on condition that they are contributed solely to the Journal. Copy must be double-spaced and two copies, an original and one carbon, submitted.

Advertising: All correspondence concerning advertising should be addressed to The American Dietetic Association, 620 N. Michigan Ave., Chicago 11, Ill.

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Entered as second-class matter June 30, 1925 at the Post Office at Baltimore, Md. under the act of August 24, 1912

Published monthly by The American Dietetic Association

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The Conquest of Scurvy[1]

ANTHONY J. LORENZ

Director, Nutrition Research, Sunkist Growers, Los Angeles

THE YEAR 1953 is a "centenary year" in the history of scurvy. It is the bicentenary of the publication of James Lind's monumental *A Treatise of the Scurvy* (1) which was commemorated in May, 1953 in a two-day international conference of nutritionists at Lind's alma mater, the University of Edinburgh. World honors came tardily to this Scot physician to whom the sciences of nutrition and dietetics are forever indebted.

It was Dr. James Lind, the first great experimental nutritionist, who laid the foundation for the concept of deficiency diseases—that man became ill by lack of an essential food element. In a brilliantly conceived and carefully controlled clinical experiment, Lind compared the various current remedies used in treating scurvy. Aboard the warship, *Salisbury*, cruising in the English Channel, he evaluated the relative antiscorbutic activity of various "acidic principles," comparing sulphuric acid and water, vinegar, and cider with oranges and lemons.

The description of the *Salisbury* experiment is usually the only thing now quoted from Lind's books. As most of you will recall, he took twelve scorbutic sailors, divided them into six groups. He housed them in the same "sick bay" and gave them the same basic diet of soups and broths, "water-gruel sweetened with sugar in the morning; fresh mutton-broth oftentimes for dinner; at other times light puddings, boiled biscuit with sugar, etc., and for supper, barley and raisins, rice and currants, sago and wine or the like." This was as good a scurvy-producing diet as any biochemist today could devise.

To this *control* diet, Lind added, as in paired feeding: 1 qt. cider a day, for his first group; 25 drops of "oil of vitriol" or sulphuric acid in water three times a day, for the second; "two spoonsful of vinegar three times a day, on an empty stomach, for the third group." Two of the "worst patients" received a "course of sea-water, half a pint a day, as a gentle physic." Two others each received two oranges and one lemon a day. The remaining two received only the control diet.

As Dr. C. P. Stewart, Professor of Clinical Chemistry at the University of Edinburgh and one of the editors of the University's bicentenary edition of Lind's *Treatise*, said recently (2): "This 'experiment,' the first carefully controlled therapeutic test in medical history, proved beyond doubt the efficacy of lemons and oranges and the relative or complete uselessness of the other remedies in vogue; above all, it showed that the disease was preventable."

The biography of Lind by Captain Louis H. Roddis, M.C., U.S.N. (3), not only affords interesting reading but an understanding of the second phase in the history of therapeutic dietetics. The first phase is that shrouded wholly in folklore and superstition, such as "frae fruites keep thine abstinence," because of the coincidence of diarrheas with the ripening of fruit[2].

In another passage in his treatise, Lind adds that the men receiving the cider also improved, but much more slowly. On the basis of the known ascorbic acid content of cider and of oranges and lemons, the nutritionist today can readily see how accurate Lind's observations were. They almost arrived at a bioassay value of ascorbic acid for these fruits.

THE LAG IN APPLICATION OF KNOWLEDGE

However it was no new idea, even in Lind's day, to use citrus fruits to cure scurvy. They had been recommended by physicians for two centuries. The Dutch physician, Ronsseus (1564), was the first to recommend oranges as the antiscorbutic for sailors. Dr. John Woodall, in 1639, had said (4): "The juyce of lemmons is a precious medicine; and well tried, being sound and good" for the scurvy. He was the first English physician to prescribe citrus fruits. Thus, one can see that more than a

[1] Presented at the History of Nutrition Luncheon held during the 36th Annual Meeting of The American Dietetic Association in Los Angeles, on August 27, 1953.

[2] The warm weather afforded excellent opportunity for contamination of water supplies from the open ditches and unsanitary sewage disposal of Chaucer's England. The ripening of fruits was merely coincidental, but linked firmly with the other in the folk-mind.

century of "lag" occurred between Woodall's observations on "three spoonsful of lemmon juyce in the morning" and Lind's testing it by comparison with other acidulous drinks.

It took fifty years for Sir Gilbert Blane, another Scot physician, to put Lind's findings into effect in the British navy and for its sailors to become known as "limeys" (the abbreviation for "lime juicers"). Blane, as the personal physician to Admiral Rodney, and later as physician to the British Fleet (equivalent to Surgeon General), had the influence and later the power to put into effect Lind's teaching. Lind apparently foresaw this lack in himself, for he wrote (5) what has now become his motto engraved on the bronze plaque placed on the portal of his alma mater last May: "The province has been mine to deliver precepts: the power is in others to execute."

Another twenty-year lag occurred before the infant American navy took heed of Captain David Porter's advice, in 1811, to make lemon juice a part of the American seamen's ration. Dr. William Barton, the former ship's surgeon of Porter's heroic *Essex* became Surgeon General of the Navy and recognized the value of citrus fruit. Those are well established dates in the conquest of scurvy.

SCURVY—A DISEASE OF NORTHERN SAILORS

Ronsseus and Echthius, the northern European doctors of the sixteenth century, and Eugalenus in the seventeenth century pioneered in the study of this disease whose name is strictly of Norse and Teutonic origin[3]. I doubt whether "the Greeks actually had a word for it." "Sceletyrbe" is defined by Maynwaringe (6) as meaning "spots and pains in the thighs," which some of the early writers believed to mean scurvy. Nor can it readily be found in the writings of the Arabian, Jewish, Spanish, and Italian physicians. These were the medical men of countries bordering on the Mediterranean, with milder climates and longer seasons of fruits and fresh vegetables. Sailors on the Mediterranean, whether of Homer's *Odyssey*, or later, were seldom more than several days' journey away from land and vegetation, and one must remember that it usually takes some sixty days of deprivation of ascorbic acid to produce scurvy in human beings.

In the seventeenth century, however, England, Spain, Holland, and France were busily plying their overseas trade routes to their newly-established colonies. Global circumnavigation and exploration tempted the venturesome.

Transportation still lagged in the doldrums of the sail, and food preservation was circumscribed by the technologies of brining or drying, both of them destructive of ascorbic acid. Either more rapid transportation to offset the forty- to sixty-day "incubation period" of scurvy, or a stable source of an anti-scorbutic, would banish the "scourge of the sea." That is why we find such a zeal for conquering scurvy, particularly in England and Holland. The sailors of Spain and France carried on shipboard onions and leeks, with an excellent storage life for ascorbic acid. In addition, they doubtlessly had a better body reserve of ascorbic acid, due to their greater fruit consumption when ashore. That does not, however, mean that they were physiologically immune to scurvy as we shall see later.

SCURVY IN THE CITY

The seventeenth century also saw the development of large cities, reliance on the "green grocer" instead of on the family garden plot for fresh or, as they were then called, "recent" vegetables and fruits. This, too, is important in studying scurvy.

Historically, scurvy not only was a disease of northern climates (viz., "the Dutch Distemper"), but it was a disease of urban population before it was the "scourge of the sea." The rural dweller, except for a few weeks in late winter, still had meager stores of leeks, onions, and cabbages, while his medieval city cousin had been reduced to the monotonous winter diet of bread and meat.

Scurvy was an annual spring epidemic for the larger cities. No wonder the earliest writers on the subject were continental. They hailed from Amsterdam, Leipsic, Marburg. It was not until after 1492 that we read of "sea scurvy." Before then, voyages had been self-limiting in length, not only through fear of "sailing over the edge of the world," but fear of scurvy. Scurvy not only debilitates physically but induces mental changes—so-called "cantankerousness," the brooding and quarrelsomeness attributed to the many "scorbutic aches," and pains often described as rheumatic. In old narratives of exploration one finds descriptions of these temperamental upsets preceding mutiny.

There was, therefore, a pressing need for the immediate conquest of scurvy. Fortunately this seventeenth century passion for exploration extended beyond the discovery of new lands. It came just at the time when scientific thinking, particularly in the "natural sciences" and in medicine, began to employ the experimental method of research.

Yet we wonder why Robert Boyle, in 1696, the father of chemistry and the greatest scientist of his day, failed to recognize the cure for his own scurvy and published eighteen recipes (7), which he called "receipts" for scurvy. All but one of them, we now

[3] "The Latin name Scorbutus, now more frequently used among Physitians, being a name not of long standing, unknown to the Ancients, and therefore called by some a new disease, but falsely; and it is not against Reason to think this disease to be of great antiquity as most infirmities incident to the body though known by divers appellations, suting with some of the symptoms, or products that follow this Disease, yet insufficiently and erroneously discovered in their Causes" (6).

Courtesy U. S. Surgeon General's Library, Van Kaathoven Collection

Dr. Everard Maynwaringe, English physician of the seventeenth century, who wrote glibly of scurvy to promote the sale of his secret anti-scorbutic pill. He visited America in 1653 and formed an aversion to tobacco, linking its use with scurvy.

know, must have been without any value in the treatment of the disease. Boyle's *Medicinal Experiments, or A Collection of Choice and Safe Remedies* (7) lists thirteen remedies for "the fastening of the loose teeth." One of these is captioned: "A Medicine prescrib'd to a great Prince (Charles the First) to fasten the Teeth" and reads as follows:

> Take a pint, of Spring-water, and put to it four Ounces of Brandy; let the Patient wash his Mouth with the Mixture of these every Morning, and twice or thrice a day besides; and let him in the Morning, roul for a little while, a bit of Roch-Allom to and fro in his Mouth

This would indicate that King Charles I was not immune to an ascorbic acid deficiency, and that poor nutrition is no respecter of rank or person, and that scurvy was not a disease of the poor.

Loose teeth and bleeding gums were, and still are, one of the first observable diagnostic signs of scurvy. The petechiae and ecchymoses on legs, particularly the shins, came later. Space does not permit telling some of the other quaint diagnostic descriptions[4] found in the older books.

MAYNWARINGE—LIND'S PREDECESSOR

We might also commemorate another "scurvy centenary." The year, 1953, is the three hundredth anniversary of the brief visit to America of the oft-quoted "authority" on scurvy—Dr. Everard Maynwaringe, whose *Morbus Polyrhizos et Polymorphaeus* (*A Treatise of the Scurvy*) (6), the same title which Lind's first edition bears, was written a hundred years before Lind.

In preparing a paper for the Lind Bicentenary Conference ("Some Pre-Lind Writers on Scurvy") (8), a number of the early "authorities" in their original texts had to be re-read. Among them was Maynwaringe, to whom Lind, in his own extensive review of the literature of scurvy, gave little heed.

Maynwaringe was an intriguing character. A one-line reference in the Latin foreword by Maynwaringe's friend, Dr. Christopher Lawrence, indicated that their "friendship had begun in America." More important, of course, is the ethical contrast between Maynwaringe and Lind. Whereas Lind was first and foremost a physician, true to his Hippocratic oath and the great traditions of medicine, Maynwaringe was an "empiric" as his contemporaries politely termed him in lieu of using the word "quack", which he turned out to be.[5]

A brilliant student of medicine[6] at Cambridge University, Maynwaringe was everything that Lind was not. Even though we view Maynwaringe's work in the light of the charity of his having lived a hundred years before Lind, we cannot forgive the selfish quackery of his "Scorbute pill" and "Catholick (universal) elixir." These he "touted" in his book with all the rhetorical flourish of a "spieler" in an old-time medicine show.

Maynwaringe published his *A Treatise of the Scurvy* (6) in London in 1665,[7] the year of the plague, while he was in charge of the "pest house of the Society for Employing the Poor." Incidentally, he boasted that of the eighty-six plague patients treated with his elixir, fifty-six were returned "safe and sound."

[4] "Gingipedium," a descriptive word for scurvy used by a few early writers, coined to show simultaneous involvement of both the gums and the feet.

[5] Maynwaringe styled himself in later years as a Doctor of Hermetic Phylosophy and Physick.

[6] Maynwaringe's description of the process of digestion, viz., "meat being received into the stomack, must suffer a transmutation there in the first laboratory and preparatory Office, for nutrition of the body; the principal agent in this work, is the stomachical ferment; this ferment by its incisive acidity penetrates, rarefies, and volatiseth the food, and transmutes it into Chyle, or white juice: That which before was fixed, gross, hard or tough, is made Volatile, rare and fluid, which having obtained that previous digestion and perfection proper for that place, the lower orifice of the stomack opens and gives it emission, sending it to the next Office of digestion for a new impression" (6).

His references to the dietetic cause of scurvy are few since he was interested solely in promoting the sale of his pills. On page 33 of his *Treatise*, he cites as Theorem 8 "that the Scurvy is procured occasionaliter, by numerous and various diaetick accidental causes, reducing the vital principles to declension and deviation from their rectitude and integrity."

[7] Maynwaringe's so-called *Treatise* was published in 1665. The advertisement for his "antiscorbutick medecines" which is bound in with the writer's copy is dated 1664, indicating that the advertisements for his "Scorbute Pills"

Everard Maynwaringe wrote innumerable medical tracts, all of them boosting his "universal elixir"; the last one (9) in 1698, the year before his death, in poverty. One of the last acts of his life was to circulate copies of his diplomas from Cambridge to aid in the sale of this final pamphlet entitled *Ignota Febris*. The public had lost faith in his "cures."

SCURVY IN CALIFORNIA

Scurvy is to be found on the very first page of the history of California. Father Francisco Palou, the Franciscan missionary, who was with Father Junipero Serra when he founded the first of California's missions, the Mission San Diego, records in his memoirs (10) that the Spanish bark *San Carlos* arrived on April 20, 1769, to join the overland expedition led by Portola and Father Serra. Aboard the *San Carlos* was Don Pedro Prat (11), graduate of the medical school of the University of Barcelona, the first physician, incidentally, to set foot on the shores of California. The 200-ton *San Carlos* left Cape San Lucas (or La Paz) in Lower California and took 110 days to reach San Diego harbor. It carried a year's supply of food, including livestock, cattle, and chickens, with which to set up the agricultural economy of the new mission. During this 110-day voyage, Father Palou wrote (10), "the bark was infected and those on board stricken with scurvy . . . and spread[8] quickly to the crew of the *San Antonio*, so that in a short time nearly all the men were suffering with the disease from which thirteen of the volunteer soldiers died." He added that "of the crew of the *San Carlos* only five remained alive and of the *San Antonio* only seven were left."

The first building erected on California soil was a hospital of sailcloth and driftwood—half tent, half hut—by the men from the *San Antonio*. Dr. Prat's first action on being carried ashore was to search for anti-scorbutic herbs with which to treat his patients and himself. We have a record (12) of that first hospital meal: soup made with hardtack. This was on May 5 or 6, 1769.

In his own diary, Dr. Prat blamed the illness on the water which the ships had taken aboard at the Cedros Islands when the original fresh water casks were broken in the tossing of the storms. On the other hand, his subsequent action indicates clearly that he also recognized the disease as scurvy.

AN EARLIER VISCAINO

The Viscaino of the *San Antonio* is not to be confused with Don Sebastian Vizcaino who came to the California coast in the 1602–03 expedition, almost one hundred and seventy years before Father Serra and Portola. He also left a vivid account of scurvy and its treatment. We are indebted to Dr. Robert Glass Cleland (13, 14), eminent California historian of the Huntington Library staff, for bringing the Vizcaino account to our attention:

> In the account of the expedition of Sebastian Vizcaino to the California coast in 1602-03 there is an interesting description of a very efficacious cure for scurvy which Vizcaino discovered at Mazatlan. When he reached that port his men were suffering "the greatest affliction and travail ever experienced by Spaniards; for the sick were crying aloud, while those who were able to walk or to go on all fours were unable to manage the sails."
>
> But "God like a father of mercy caused to be provided in these islands a small fruit like agaves, called jocoistles.[9] These because of their strength, when eaten by the men who had sore mouths, caused the ulcers to slough off and bleed profusely but such was the efficacy of the fruit that within six days there was not a single person whose mouth was not healed."

and "Catholick Elixir" were circulated before the descriptive treatise of the disease itself was published.

The *Treatise*, however, had been written before 1665, since the writer's copy of Maynwaringe bears the "imprimatur" of the Bishop of Lambeth, dated September 9, 1664, and is dedicated to the Earl of Lindsey, the Lord Great Chamberlain of England under Charles II. The Maynwaringe family connections in England and America were excellent. They included Roger Mainwaring, the heroic Bishop of St. Davids, who, as Chaplain to King Charles I, preached a sermon censuring the King, for which he was imprisoned; and Sir Henry Mainwaring (the name has some eighty variations in spelling) who was one of the original shareholders in The London Company which colonized Virginia. Dr. Everard, himself, was the son of the Reverend Kenelm Maynwaringe, a rector of the Episcopal Church of Gravesend, Kent.

[8] The apparent discrepancy between Father Palou's and Dr. Prat's accounts, the former calling it "scurvy," the other regarding it as dysentery caused by the water taken aboard at Cedros Islands, is cleared up by the Palou reference to the "rapid spread" of the disease to the crew of the *San Antonio*. The *San Antonio* was a smaller ship, and a supply ship, and left La Paz 51 days later than the *San Carlos*, which got off its course and was becalmed and took 110 days, ample time for the development of scurvy. The *San Antonio*, taking only 51 days for the voyage, apparently suffered no serious outbreak of scurvy while at sea. Its crew was called upon to land the *San Carlos* and unload the supplies, and once in contact with the scurvy-dysentery weakened crew and soldiers of that ship, the sailors of the *San Antonio* contracted dysentery which *is* communicable whereas scurvy is not.

[9] Dr. E. M. Harvey, Senior Plant Physiologist at the U. S. Department of Agriculture's Horticultural Field Laboratory in Pomona, believes that the Aztec word, *jocoistle*, may well apply to one of the cacti abundant in both the Mexico and California deserts and widely used as a food by the native Indians. "The quotation," Dr. Harvey writes (15), "was written so long ago that I cannot be sure the name applied then the same as today. *Jocoistles* and several other Aztec names, e.g., *xoconochtli*, *joconoztle*, are used for a widely distributed species of cactus (*Opuntia imbricata*). The plant is large and often tree-like. The Indians throughout the area consumed quantities of its fruit. The natives usually roasted the fruit overnight in pits with hot rocks, so if Vizcaino's sailors ate them raw, it is no wonder the tops came off their ulcers!"

Two other methods of preparing the *Opuntia imbricata* for food use have come down from the early California settlers. The orange-colored fruits were peeled and eaten raw and also made into a conserve or jam by the Spanish

The flagship of Vizcaino's fleet of three frigates was named the *San Diego*. The others were the *Tres Reyes* and the *San Tomas*, all sailing from Acapulco, then a great trading port. Like the *San Carlos* one hundred and fifty years later, the Vizcaino ships ran into trouble, storms, and sickness, so that the *San Tomas* had to be sent back to Acapulco with the sick. Only five of the crew of the *Tres Reyes* survived. Both its captain and pilot died on the voyage. By January 25, 1603, nine months after leaving Acapulco, Vizcaino sighted the harbor of Monterey where the Indians signalled with smoke. Vizcaino wrote (15):

> We did not enter it because the state of our health was so bad and the sick were clamoring, although there was neither assistance nor medicines nor food to give them except rotten jerked beef, gruel, biscuits and beans and chick-peas spoiled by weevils.
>
> The mouths of all were sore, and their gums were swollen larger than their teeth, so that they could hardly drink water, and the ship seemed more like a hospital than a ship of an armada. Affairs were in such a condition that anyone who had ever in his life been at the helm steered, climbed to the maintopsail, and did the other tasks, and all who could walk assisted at the hearth, making gruel and porridge for the sick.

It was Vizcaino's intention to wait for the *Tres Reyes* from which they had become separated, at Santa Catalina, where he had arrived on January 29, and he adds: "Although many canoes of Indians came with fish and other things, inviting us to go to them, the General did not dare cast anchor among them, as he did not have men strong enough to raise the anchors, and as the sick were dying of hunger because they could not eat what was on board the ship on account of their sore mouths, so the General ordered that we go to the islands of Masatlan."

Vizcaino arrived there on February 18. Only five of the soldiers aboard were able to walk.

Being informed of the necessity which had forced the General to go there to succor his perishing men, the *Alcalde* (mayor) of Sacarita, Martin Ruis de Aguirre, aided generously with gifts of hens, chickens, kids, beef, veal, bread, fruits,[10] and vegetables, from which the men "received great refreshment and nourishment." Then follows the passage regarding the use of the *jocoistle* cactus quoted above.

A slightly different version of this same Vizcaino voyage is to be found in Padre Miguel Venegas' *Noticia de la California* (16). These descriptions are clearly those of scurvy and further disclose that Father Venegas, born in Mediterranean Spain where scurvy was virtually unknown as such, failed[11] to recognize it. Again, Father Venegas writes:

> Their bodies were sick, weak, and they were unable to work. They were covered by purple spots, some of which were "two fingers" high. Their knees were hard as rocks, and they were unable to use their feet. They could not move without great suffering, all their muscles remaining "deathlike". . . Their shoulders and knuckles were sore, and all wanted to die. Those who had remained healthy and tried to aid them only made matters worse. But this was not the worst part; besides this, their jaws, insides of the mouth, and gums and teeth were affected. The jaws would not come together and their teeth came out two by two, and wiggled when they moved their heads. They were unable to eat and could only drink liquids, such as *Poleadas*, *Ormiguillos*, *Almendras*[12] and such, and if they could not drink, there was no other way they could gain sustenance. They were so ill, they died while talking and conversing with one another.

NINETEENTH CENTURY CALIFORNIA

Numerous outbreaks of land scurvy occurred in the Mother Lode in the days of California's gold rush from 1848 to 1855. Harris (18) estimates that one miner in thirty-six had scurvy and that the mortality was 30 per cent. In the report of the San Francisco Hospital for December 8, 1850, forty-six cases of scurvy were listed. Some seventy miners were reported to have died in the "scurvy epidemic" of the winter of 1849–50 in Drytown, one of the placer towns in the northern mines. With the typical cynicism of history, the only building identifiable today is Drytown's butcher shop. Elsewhere one reads that in 1850 in Sacramento, "salt provisions

settlers. The main use, however, to which the Indians put the spiny cactus leaves was to make a sort of fritter. First, the spines were burned off. Then the broad leaves were dipped in a batter of acorn meal. To make this acorn dough palatable, the tannic acid had to be leached out; this was done by putting the wet ground acorn meal into a hole scooped in the sand, then pouring over it not less than ten gourds of water. The dough mass (*masa*) was then suspended in water to permit the sand to settle out. The despined cactus leaf was then dipped into the batter, or the dough was patted around the leaf, and the fritter fried on hot stones. Chemical assays made by the author a number of years ago of the juice of the cactus leaves showed it to contain about 0.1 mg. ascorbic acid per gram.

[10] According to Father Ascensión, it was the *Alcalde* of the Villa of San Sebastian, and the fruit is called *manzanilla* (*Opuntia imbricata*).

[11] "They didn't know exactly the cause of this sickness which was visited upon the sailors coming from China to New Spain, and which brought death to so many. They thought it was probably caused by the high, sharp wind" (17).

[12] *Poleadas:* in Spanish cookery, a "clear soup or broth" corresponding to Mexican *atole*.

Ormiguillos (Spanish spelling, "hormiguillos"): an almond-flavored liquid dessert.

Almendras: almond-milk (*leche de almendras*), an emulsion of almond meal in sweetened water.

are too plenty (plentiful) to pay storage, they are not in demand and, on acc't. the prevailing bowel complaints."

Not all of California's scurvy tales are as doleful as these. There is romance and a successful happy ending for this one which also illustrates an important point in the treatment of scurvy at the time of Dr. James Lind.

In 1814 the British merchantman *Isaac Todd*, probably en route to the British possession of Vancouver, landed in the harbor of Monterey (California), to put ashore a twenty-year old Scot lad named John Gilroy Cameron. The young man had developed scurvy on the around-the-Horn voyage.

In the belief[13] still prevalent among sailors of that day, young Cameron had to be put on land to recover from sea scurvy. To make the story brief, he was nursed back to health and became the first "foreigner" to be naturalized by the Spanish-Mexican authorities of California. He became a Roman Catholic and in 1821 married Senorita Maria Cara Ortega, the beautiful daughter of the wealthy and socially prominent Ortega family. He dropped the Scotch clan name "Cameron" and retained his "personal" name Gilroy which was later bestowed on the town that grew up on the site of his hospitable "Rancho Gilroy."

The history of scurvy is, as you can see, fascinating reading and research, and rewarding in more ways than in dietetic knowledge. It can lead you far afield, too, but I have never found it dull reading.

[13] "We observe that Sea-faring Men, who labour under very rank Scurvies, constantly grow better as soon as they set Foot on Shore. And though it be granted that their growing better is principally owing to their Removal from the foul Ship Air, yet it is not improbable that it is also in some measure owing to the Vapours or Exhalations of the Earth, which then surround them in great Abundance, and which consist chiefly of the most active balsamic Spirits of Trees, Shrubs, Grass, and Flowers, being much more freely imbibed into their Bodies, than they could be at Sea, and so giving a great and sudden Check to their near Approaches to Putrefaction . . .

"If the Patient then be on Shore, 'tis well known that the circumambient Air and the Fruits of the Ground will prove the best Remedies. Dr. Cockburn, who was a physician to the Fleet, tells us (19) that he has seen many scorbutic Persons put ashore in the weakest and most deplorable Condition, who by feeding only on Coleworts, Carrots, Cabbages, Turnips, and other Green Trade, as the Sailors call it, were able in three or four Days to walk several Miles" (20).

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Cantaloupes

Although named for the Castle of Cantalupo in Italy, where they were first grown in Europe, cantaloupes originated in the hot valleys of Iran (Persia). They came to America with the early settlers. They still thrive in a climate which provides plenty of sunshine, a long growing season, and ample soil moisture. Thanks to modern refrigerated shipping, melons can be harvested when ripe enough for good eating and still travel long distances safely. If picked too green, they never ripen to good eating quality.

Poliomyelitis and the Relation of Diet to Its Treatment[1]

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POLIOMYELITIS is a name derived from the Greek *polios* meaning grey and *myelos* meaning marrow—thus the word denotes an affliction of the grey marrow of the spinal cord. In reality, diagnosable poliomyelitis involves much more of the central nervous system than this name would indicate. "Infantile paralysis" is likewise a misnomer, since many older children and adults are victims of the disease. Actually, poliomyelitis is a generalized virus infection, which, in a small percentage of cases affects the central nervous system and becomes evident clinically. When skeletal muscle is paralyzed, we term the case "spinal poliomyelitis." When the nerve centers in the brain stem are involved, producing impairment or paralysis of the swallowing mechanism, we term the case "bulbar poliomyelitis."

Poliomyelitis is an ancient disease, as is indicated by archeologic findings from as far back as 3700 B.C.; yet it has occurred in considerable numbers only in modern times. The first good description of the disease was made by a German orthopedist, Jakob vonHeine, in 1830. In this country, the first epidemic of note occurred in Otter Creek, Vermont, in 1894, and the first catastrophic epidemic, involving the New York, Cleveland, Chicago, Minneapolis, and Los Angeles areas occurred in 1916. Seventy-five per cent of the victims were children under five years of age, and most survivors were badly crippled.

Since then, it has been mildly endemic in these areas. Since the beginning of World War II, however, it has spread rapidly through the country and has become more prevalent. Older age groups have more frequently been involved. While it is predominantly a disease of the temperate zone, the Arctic and Subarctic areas as well as the tropics have been invaded in recent years. In Illinois, the disease has occurred in a fairly regular three-year cycle, but in recent years the valleys of the graph have been less deep and the peaks have been higher. In 1952, Illinois had approximately 4,000 cases and the United States approximately 55,000. While this is not a large number, as communicable disease figures go, there are several reasons why poliomyelitis is a major problem. Its care is expensive and often long continued. In perhaps 10 per cent of the cases, it produces permanent handicap. Since these handicapped persons, generally speaking, have a normal life expectancy, goodly numbers are present in the population as the years go by. The public health implications and the general public hysteria in relation to this disease, which strikes the young and active population, create additional problems.

Since Landsteiner and Popper first demonstrated the virus of poliomyelitis in 1909, efforts have been made to prevent the disease. First among the trials were the vaccines of Brodie and Kolmer in 1935. These preceded any knowledge of the variety of strains of virus that cause the disease and were produced when the poliomyelitis virus could not be separated from nervous tissue; hence these vaccines proved useless and even harmful. Gamma globulin, a fraction of human blood, was known to contain antibodies against the various strains of poliomyelitis virus, and, therefore, has been tried for temporary immunizing agent. It probably does have some protective influence, but from the practical standpoint, is not available in adequate quantities, and the time it should be administered to a given individual is almost impossible to determine.

Several things must necessarily be accomplished

[1] Received for publication May 10, 1954.

[2] The author wishes to express his gratitude to Leila Colwell, Director of Dietetics, Evanston Hospital Association; to Arla Jacobson, who originally stimulated this effort; and to Ann Johnston, who aided materially in the preparation of these diets.

to produce an immunizing agent which will give lasting immunity, with safety, to the susceptible population. (a) We must determine the varieties of virus causing the disease. (b) The virus must be grown in quantity on something other than nervous tissue. (c) We must have means of determining the fact that the disease-producing property in vaccine has been destroyed. (d) We must be able to destroy this disease-producing property, without destroying the power of the vaccine to produce an immune reaction in the patient.

It has been determined that there are three major groups of poliomyelitis virus strains which must be represented in a vaccine. Enders of Harvard succeeded in growing virus on tissue cultures of monkey kidney. Bodian and Horstmann demonstrated that virus appears in the blood during the incubation period of the disease, and Salk of Pittsburgh and Shaughnessy, Levinson, and Milner of Chicago have been able to produce multiple-strain vaccines which seem to answer the requirements stated above. Field trials are now in progress on the Salk vaccine, sponsored by the National Foundation for Infantile Paralysis, and it is ardently hoped that these will be successful in eliminating this disease.

DIETARY TREATMENT

Most patients with poliomyelitis are treated in hospitals and are usually concentrated in a relatively few hospitals in a given area. There is no good reason why they cannot be treated in any general hospital.

Treatment of the average patient with *spinal poliomyelitis* resolves itself largely into symptomatic and supportive measures. There is no specific drug treatment, but nursing care is quite formidable, and physiotherapy—to prevent deformity and speed rehabilitation—is time-consuming and laborious. During the acute febrile period, a liquid to soft diet is indicated. As the patient recovers, a high-protein, high-calorie, high-vitamin diet would seem indicated. Vitamin supplements are, of course, commonly given after the acute stage.

Since many of these patients are quite depleted and psychologically affected by their experience, it seems highly important to me that trays should be attractively served, that the food should be of high quality and appetizing in appearance. Their appetites, at best, are anything but good, and even though a tray may contain ever so many calories and nutrients, it will probably end up in the garbage pail unless it is appetizing in appearance.

The most urgent dietary problem occurs not in the patients with spinal poliomyelitis but rather in those with *bulbar poliomyelitis*, where it is difficult or impossible for the patient to swallow. In fact, in bulbar poliomyelitis, the diet can be lifesaving. But the real problem is in the patient's ability to swallow. I have at present one patient who has swallowed nothing but a few spoonfuls of gelatin during the past ten months, and who has depended during that entire time on intravenous feedings and tube feedings for his sustenance.

Tube Feedings

FORMULA NO. 1
2000 cc. milk
400 cc. cream
200 cc. Karo
100 cc. orange juice
6 eggs

Yield: 3000 cc.
Approximate nutritive value per 100 cc.: 4.3 gm. protein; 6.4 gm. fat; 9.2 gm. carbohydrate; 112 calories (1120 calories per 1000 cc.)

FORMULA NO. 2
500 cc. milk
200 cc. cream
100 cc. Karo
3 eggs
50 cc. orange juice
100 cc. Lipomul (10% dextrose, 40% vegetable oil)
100 gm. Protenum (42% protein, 46% carbohydrate, 2% fat)

Yield: 1000 cc.
Approximate nutritive value per 100 cc.: 8.4 gm. protein; 11.2 gm. fat; 17.0 gm. carbohydrate; 206.4 calories (2064 calories per 1000 cc.)

FORMULA NO. 3 (SKIM MILK FORMULA)
120 gm. dried skim milk powder
720 gm. skim milk
50 gm. sugar
4 eggs

Yield: approximately 1000 cc.
Approximate nutritive value per 100 cc.: 9.3 gm. protein; 2.6 gm. fat; 15.0 gm. carbohydrate; 120 calories (1200 calories per 1000 cc.)

(To any of these tube feeding formulas is added the daily requirement of one of the soluble multiple-vitamin preparations.)

When these patients are in the acute phase, vomiting is a common symptom, and they tend to drown in their own secretions or in the material that is vomited or aspirated. Therefore, they are given *nothing by mouth*. Frequently, they also require tracheotomy (1) in order to maintain an open airway. The problem, then, is to provide essential food nutrients in easily digestible form by whatever route is available. At first, all feeding is intravenous, and this does not involve the dietary department. Glucose and fructose solutions, protein hydrolysates, and electrolyte solutions are given.

Stage I

After a few days it is usually possible to pass a plastic tube through the nose into the stomach and the first stage of oral feeding is begun. We use one of three formulas for tube feeding (see accompanying box) depending upon the concentration of calories or protein needed at the time. Ordinarily, feedings at first may be from 30 to 50 cc., alternating every

2 hr. with water. In the course of a day or two, they can usually be increased to 150 to 200 cc. of formula or water. It is then possible to supply much more adequate protein, fat, carbohydrate, and vitamin intakes than can possibly be given by vein.

Stage II

As the ability to swallow returns, Stage II, in which a liquid diet is employed, is entered, and this function can be *cautiously* tested. Ordinarily, we begin with grape juice, and by using a teaspoon or two, it is usually possible to tell whether the patient is swallowing or aspirating, as the color of the grape juice is easily seen in the tracheotomy opening or in the material suctioned from the naso-pharynx, after an attempt at swallowing. If this is successful, strained citrus fruit juices (diluted) and apple juice, clear broth, and tea with sugar are cautiously tried. Flavored gelatin is frequently taken well quite early in the course of recovery.

Milk and cream seem to produce more mucus, and hence are undesirable at this stage. Since these patients will take relatively small amounts, tube feeding and vitamin supplements are naturally continued during this period.

Stage III

As the liquid diet is well taken for a few days, one hopes to broaden the nutritional program to include a diet of soft, easily digested food, low in fiber, to be used while the patient learns to swallow still more effectively. As oral intake increases in volume and caloric value, the tube feedings are correspondingly decreased and the following soft, low-fiber diet of Stage III is begun.

FOODS ALLOWED
- All foods from the tube feedings and the liquid diet given in Stages I and II
- Soups: bouillon or strained meat soup
- Cereals: farina or Cream of Wheat with large amounts of sugar and little milk (sugar cuts mucus)
- Eggs: poached or soft boiled
- Fats: butter as desired
- Meats: well cooked or puréed
- Vegetables: well cooked or puréed
- Fruits: puréed, cooked, or canned (without seeds, coarse skin, or heavy fiber), or strained juices
- Desserts: sherbet, custard, or flavored gelatin
- Beverages: tea with sugar, water, or coffee

FOODS TO AVOID
- Strong flavored vegetables, i.e., cabbage, cauliflower, onions, turnips
- Foods with seeds, i.e., berries, tomatoes
- Fried foods
- Raw fruits and vegetables
- Rich pastries
- Highly seasoned and spiced foods
- Potatoes
- Starchy products, i.e., macaroni, spaghetti, rice
- Sticky foods, i.e., Welsh rarebit, cheese dishes, oatmeal, or ice cream
- Milk
- Fish

It is very important that sticky foods, such as cheese dishes, be strictly avoided. I have seen a patient well along toward recovery practically strangle on such a dish, but the most deadly of all for the patient with bulbar poliomyelitis seems to be the lowly potato. Apparently, the mealiness of the potato makes swallowing almost impossible, regardless of the form in which it is cooked. Only when recovery is far along may potatoes, mixed with a good quantity of thin gravy, be served.

Stage IV

When a patient has learned to swallow without mishap all of the foods he cares for from the soft, low-fiber diet of Stage III, he is ready to progress to the more solid food of Stage IV, where ground meat, bread, and milk products are introduced. This diet is as follows:

FOODS ALLOWED
- All foods from preceding diets
- Meats: ground beef, lamb, chicken, or turkey—with light gravies or mayonnaise
- Vegetables: well cooked (not puréed), i.e., carrots, canned peas, French-cut green beans, asparagus tips, squash, or chopped spinach
- Fruits: cooked or canned peaches, pears, apricots, or apple sauce
- Breads: soda crackers, white bread or toast—with butter
- Desserts: simple cornstarch puddings or ice cream
- Beverages: milk alone or with protein supplements, such as: Protenum, Meritene, skim milk powder, or Sustagen; carbonated beverages (in moderation)

FOODS TO AVOID
- Sticky foods
- Potatoes (no potatoes should be served until the patient's ability to swallow is well established)
- Starchy products, i.e., noodles, macaroni
- Fish

It may take one patient only four or five days to reach Stage IV, while others may require weeks, or occasionally months, to recover sufficiently. When a patient is able to swallow all foods on these lists without aspirating or regurgitating through the nose and has perhaps recovered some ability to cough, he may be placed on a general high-protein, high-calorie, high-vitamin diet, such as that served to patients with spinal poliomyelitis.

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Per capita consumption of milk in Iceland is more than double that in the U. S., according to *Nutrition News*.

Effect on School Boys of Omitting Breakfast

Physiologic Responses, Attitudes, and Scholastic Attainments[1]

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IT HAS been shown by Tuttle and coworkers (1–3) that the omission of the morning meal may result in the lowering of the mental and physical efficiency of young women, young men, and older men during the late morning hours. It is the purpose of this investigation to show the effects of the omission of breakfast on the physiologic responses, mental attitudes, and scholastic attainments of boys twelve to fourteen years of age.

DESIGN OF THE INVESTIGATION

Two experiments were carried out to show the effect of the omission of breakfast on the response of twelve- to fourteen-year-old boys. For each experiment, a general dietary plan was provided.

Experiment I—Controlled Diet

Seven boys from a local school[2] participated in this experiment, which took place during the school year. This part of the investigation required that the total dietary intake of each subject be rigidly controlled. Therefore, all subjects ate their meals at the University Hospital cafeteria. Through the cooperation of the administration and teachers at the school, a schedule was set up whereby the students could meet both the experimental and dietary requirements of the investigation. Transportation was furnished for them every day to and from home, school, and the hospital. They were called for at home at 7:00 a.m. and then taken to school after a 7:30 a.m. breakfast. Transportation was provided at the school at 11:30 a.m., and after a 12-noon lunch, the boys were returned to school for afternoon classes. Likewise, at 5:00 p.m., they were met and driven to the hospital for supper. Immediately after the evening meal, they were taken to their homes. Transportation was also furnished for the subjects, both to and from the laboratory on experimental days.

It was the intent and purpose of the dietitian who planned the controlled diet to provide as much food as each subject desired and the kinds of food that he would eat willingly. To accomplish this, a preliminary three-week period was arranged. During that time, the dietitian observed the food chosen and eaten by each subject. From these observations, she was better able to plan the meals for the following periods during which the controlled diets were served. During the preliminary observation period, too, the subjects were taught how to perform the physiologic tests they were to do during the succeeding periods.

The actual experimental period was divided into five parts, with the breakfast regimen arranged as follows:

Basic cereal-and-milk breakfast	4 weeks
No breakfast	2 weeks
Basic cereal-and-milk breakfast	3 weeks
No breakfast	2 weeks
Basic cereal-and-milk breakfast	3 weeks

Samples of a day's menus are shown in Table 1. The "basic breakfast" consisted of fruit, cereal, milk, bread, and butter which provided approximately one-fourth the total daily caloric requirement of each subject.

During the "no breakfast" periods, the morning meal was omitted and no food was allowed after 8:00 p.m. until noon the following day.

Meals were planned so that the total daily nutrient intake was the same during both the basic and "no breakfast" periods. This was done by making small increases in the dinner and supper allowances during the "no breakfast" periods and providing a heavier evening lunch.

[1] This work was generously supported by a research grant from the Cereal Institute, Inc., Chicago. Received for publication January 12, 1954.

[2] This opportunity is taken to express our thanks to Sr. Mary Alice, principal of St. Mary's School, and to Sr. Mary Valerian, who had charge of the school work of the boys. We also wish to express our appreciation to Father Schmidt who was instrumental in the organization of the group for the experiment.

TABLE 1
*Sample daily menus**

FOOD	WEIGHT	PROTEIN	FAT	CARBOHYDRATE	CALORIES
Basic Cereal-and-Milk Breakfast					
	gm.	*gm.*	*gm.*	*gm.*	
Orange juice	150	1.2	0.3	16.5	66
Cereal	30	4.9	2.0	19.4	105
Cream	100	3.3	11.9	4.4	138
Sugar	10	—	—	10.0	40
Toast	25	2.2	0.8	12.9	68
Butter	8	—	6.5	—	57
Milk, whole	420	14.5	16.4	20.6	288
Total.....		26.1	37.9	83.8	762
Dinner					
Steak, round	100	19.5	11.0	—	182
Potatoes, mashed	100	2.3	0.2	17.2	80
Beets	100	1.0	—	8.7	39
Banana	50	0.6	0.1	11.5	44
Lettuce	20	0.2	—	0.6	4
Peaches, canned	100	0.4	0.1	18.2	68
Wafers, vanilla	20	1.2	2.8	14.4	84
Butter	24	0.1	19.4	0.1	171
Milk	244	8.5	9.5	12.0	166
Total.....		33.8	43.1	82.7	838
Supper					
Juice, apple	200	0.2	—	27.6	100
Ham, cold	50	11.5	16.5	0.2	199
Bread	50	4.3	1.5	25.8	136
Lettuce	20	0.2	—	0.6	4
Butter	16	0.1	13.0	—	114
Mustard	10	0.6	0.8	0.6	10
Potato chips	30	2.0	11.1	14.7	162
Spinach	100	2.9	0.8	3.4	25
Ice cream	95	3.8	11.9	19.6	197
Chocolate sauce	30	0.2	1.5	21.5	100
Milk	244	8.5	9.5	12.0	166
Total.....		34.3	66.6	126.0	1213
Evening Lunch					
Milk	244	8.5	9.5	12.0	166
Apple	100	0.3	0.4	13.0	51
Total.....		8.8	9.9	25.0	217
Evening Lunch When Breakfast Was Omitted					
Milk, whole	244	8.5	9.5	12.0	166
Potato chips	15	1.0	5.5	7.4	81
Crackers	18	1.2	4.8	11.4	96
Cheese	28	5.2	6.6	3.0	92
Total.....		15.9	26.4	33.8	435

* Calculation from Bowes and Church (5).

Immediately following each "no breakfast" period, the subjects were relieved from all dietary restrictions for one week, during which time they selected their own food from the cafeteria counter. Chemical studies, to be reported later, indicated there was little or no violation of the diet.

During this experiment, not only were physiologic tests made to show the effects of the omission of breakfast, but also the attitudes and scholastic attainments of the subjects were observed.

Experiment II—Unrestricted Diet

This experiment was designed to show only the physiologic response to the omission of breakfast and was conducted during nine weeks of the summer vacation when the boys were not in school. Each boy ate all his meals at home. Eighteen boys in the same age range served as subjects.

The experiment was divided into three periods. For the first two weeks, the report of the food eaten was studied and suggestions were made to assure the eating of an adequate breakfast when this meal was to be included in the experimental dietary regimen. During this time, also, the boys learned the techniques of the physiologic tests to be performed.

For the next four weeks, all boys were urged to eat an adequate breakfast (described as approximately one-fourth their total daily food intake and including ordinary breakfast items, with milk but not coffee). On mornings when the physiologic responses were measured, each subject reported the approximate amount of food eaten and the items included in his breakfast.

The following three weeks constituted the "no breakfast" period when the subjects ate no food between 8 p.m. and 12 noon the following day. As in Experiment I, an evening lunch before 8 o'clock was allowed.

The Tests

All subjects were given thorough physical examinations during the preliminary periods of both experiments, to determine their health status.

The body weight of each subject was recorded each week during the experimental periods. The changes in body weight which occurred have been reported by Tuttle *et al.* (4).

The following physiologic responses were used to show the effects of omitting breakfast:

(a) Neuromuscular tremor magnitude.
(b) Choice reaction time.
(c) Maximum grip strength.
(d) Grip strength endurance.
(e) Maximum work rate.
(f) Maximum work output.

The techniques involved in making these measurements have been described (1–3). The attitudes and scholastic attainments of the boys were deduced from teachers' observations and records.

During all experimental periods, the aim was to obtain two complete sets of records each week for each subject. In some cases, the data fell short of this aim, due to incidents beyond our control. In fact, one subject contracted an infectious disease during Experiment I and was dropped. Thus this report covers only seven subjects.

THE DATA

The data are presented under two headings: (a) Experiment I—Controlled Diet, and (b) Experiment II—Unrestricted Diet. The physiologic responses for the periods studied are compared, both on the basis of individual and group means. The data obtained during the controlled dietary period showing

TABLE 2

Effect of omitting breakfast on neuromuscular tremor magnitude and choice reaction time

SUBJECT	CALCULATION					
	Period 1—basic cereal-and-milk breakfast		Period 2—no breakfast		t value†	Significance level*
	Mean	Standard deviation	Mean	Standard deviation		
Neuromuscular Tremor Magnitude						
	sq. cm.		*sq. cm.*			%
Subject 1	1.72	0.470	1.63	0.494	0.51	64.4
Subject 2	1.73	0.595	1.43	0.255	2.08	4.6
Subject 3	1.63	0.545	1.76	0.646	0.62	54.0
Subject 4	1.42	0.318	1.55	0.379	1.06	29.7
Subject 5	1.63	0.439	1.67	0.284	0.32	75.1
Subject 6	1.61	0.494	1.61	0.458	—	—
Subject 7	1.53	0.360	2.09	0.716	2.23	3.8
Choice Reaction Time						
	milli-seconds		*milli-seconds*			
Subject 1	321	21.80	316	32.0	0.45	65.6
Subject 2	308	54.10	326	36.7	1.15	25.9
Subject 3	297	45.30	280	49.0	1.04	30.6
Subject 4	284	27.60	271	24.2	0.45	65.6
Subject 5	266	25.64	271	26.5	0.50	62.1
Subject 6	266	35.10	264	35.2	0.16	87.4
Subject 7	332	31.20	314	11.1	1.78	9.2

* In this experiment, the null hypothesis was rejected when the level of confidence was 5 per cent or less.

† Period 1 vs. Period 2.

TABLE 3

Effect of omitting breakfast on maximum grip strength and grip strength endurance

SUBJECT	CALCULATION					
	Period 1—basic cereal-and-milk breakfast		Period 2—no breakfast		t value†	Significance level*
	Mean	Standard deviation	Mean	Standard deviation		
Maximum Grip Strength						
	lb.		*lb.*			%
Subject 1	78	14.4	80	18.4	0.29	77.4
Subject 2	69	12.3	67	8.3	0.53	60.1
Subject 3	168	17.9	140	34.3	2.36	2.8
Subject 4	90	11.3	87	9.2	0.77	44.8
Subject 5	103	26.0	95	18.5	0.94	35.6
Subject 6	79	10.9	76	18.6	0.72	47.8
Subject 7	92	22.6	87	22.8	0.43	67.4
Grip Strength Endurance Index						
Subject 1	30	7.8	37	12.6	2.39	2.4
Subject 2	28	8.2	31	6.2	0.89	38.1
Subject 3	82	14.8	74	10.1	1.23	23.2
Subject 4	42	8.7	44	3.6	0.63	53.4
Subject 5	50	9.6	50	7.2	—	—
Subject 6	38	5.4	38	2.9	—	—
Subject 7	43	11.0	45	0.7	0.29	77.6

* In this experiment, the null hypothesis was rejected when the level of confidence was 5 per cent or less.

† Period 1 vs. Period 2.

the individual mean comparisons are included, but data on the group means are omitted.

Experiment I—Controlled Diet

In this part of the investigation, the data collected during the periods when breakfast was eaten are combined and compared with all the data obtained during both "no breakfast" periods. A comparison of the data on individual mean differences in neuromuscular tremor magnitude during the two periods is shown in Table 2. Subject *2* had a significantly greater neuromuscular tremor magnitude during the breakfast period than when the morning meal was omitted, while Subject *7* showed a significantly greater neuromuscular tremor magnitude during the "no breakfast" period. On the basis of group means, there was no significant difference in neuromuscular tremor magnitude for the two different periods. It is concluded from these data that the omission of breakfast did not significantly affect neuromuscular tremor magnitude.

A comparison of the choice reaction times of individual subjects during the breakfast and "no breakfast" periods is shown in Table 2. There were no significant differences in this criterion between the two periods. The same conclusion maintains when this comparison is done on the basis of group means. It is concluded, therefore, that the omission of breakfast had no influence on choice reaction time.

The data on the effect of omitting breakfast on maximum grip strength and grip strength endurance are shown in Table 3. Subject *3* had a significantly greater maximum grip strength during the breakfast period. However, Subject *1* had a greater grip strength endurance during the "no breakfast" regimen. On the basis of group means, there were no significant differences either in maximum grip strength or grip strength endurance for the two breakfast regimens. These data indicate that the omission of breakfast had no effect either on maximum grip strength or grip strength endurance as far as this group of twelve- to fourteen-year-old boys was concerned.

Table 4 compares the mean data on the influence of omitting the morning meal on maximum work rate and maximum work output. In every case, the maximum work rate and maximum work output were significantly less during the period of the omission of the morning meal. When the data were compared on the basis of group means, it was found that both maximum work rate and maximum work output were significantly less during the "no breakfast" period. Thus the omission of the morning meal resulted in a significant decrease both in maximum work rate and maximum work output.

TABLE 4

Effect of omitting breakfast on maximum work rate and maximum work output

SUBJECT	CALCULATION					
	Period 1—basic cereal-and-milk breakfast		Period 2—no breakfast		t value†	Significance level*
	Mean	Standard deviation	Mean	Standard deviation		
Maximum Work Rate						
	kg. m.		*kg. m.*			%
Subject 1	2605	203.4	2230	452.8	2.48	2.0
Subject 2	2498	259.1	2111	364.6	3.13	0.4
Subject 3	2566	297.2	2109	273.9	2.65	2.4
Subject 4	2748	391.0	2205	372.5	4.05	0.1
Subject 5	2564	272.3	2062	373.2	3.90	0.1
Subject 6	2668	421.0	2091	437.2	3.88	0.1
Subject 7	3030	409.2	2145	437.1	3.96	0.1
Maximum Work Output						
Subject 1	1926	89.8	1449	204.4	6.99	0.1
Subject 2	1704	173.3	1226	160.7	7.78	0.1
Subject 3	1928	106.1	1539	181.1	4.38	0.1
Subject 4	2114	193.2	1533	165.5	9.28	0.1
Subject 5	1634	138.6	1185	111.8	9.90	0.1
Subject 6	1825	207.4	1318	145.7	8.49	0.1
Subject 7	2039	170.5	1292	69.6	12.83	0.1

* In this experiment, the null hypothesis was rejected when the level of confidence was 5 per cent or less.

† Period 1 vs. Period 2.

Experiment II—Unrestricted Diet

In this part of the investigation, the physiologic responses of the twelve- to fourteen-year-old boys during the breakfast and "no breakfast" periods were compared on the basis of group means only, and the raw data are omitted. Since these data show results similar to those obtained in Experiment I where the total daily food allowance was rigidly controlled, only a summary is presented, as follows: (a) Neuromuscular tremor magnitude and choice reaction time during the late morning hours were not significantly affected by the omission of breakfast. (b) Maximum work rate and maximum work output were both significantly less during the "no breakfast" period. Due to mechanical difficulties, maximum grip strength and grip strength endurance were not measured.

PSYCHOLOGIC EFFECTS OF OMITTING BREAKFAST

During Experiment I, when the total daily food allowance was rigidly controlled and the boys were in school, the teacher in charge of the group made careful observations and records of the attitudes and scholastic attainments of the boys. Her report showed that the majority of the boys had a definitely better attitude and a better scholastic record during the period when breakfast was included in the daily dietary regimen than when it was omitted. For example, some of the boys were careless and inattentive during the late morning hours when breakfast was omitted. During the period when they ate breakfast, these same boys showed recognizable improvement, especially in scholastic attainment. One subject was reported to be careless, languid, and listless during the late morning hours when he did not eat breakfast, but did good scholastic work and had sufficient energy for outside activity during the period when breakfast was included in his daily eating plan. It was the opinion of the school principal and of the teacher that breakfast was a material asset to the boys both in the matter of attitude and scholastic accomplishment.

SUMMARY AND CONCLUSIONS

Data were collected from twenty-five school boys twelve to fourteen years of age over a period of twenty-six weeks to show the effect of omitting breakfast on their physiologic responses, attitudes, and scholastic attainments. On the basis of data presented, the following conclusions are drawn:

Neuromuscular tremor magnitude, choice reaction time, grip strength, and grip strength endurance were unaffected by the omission of breakfast.

Maximum work rate and maximum work output were significantly less in the late morning hours during the period when breakfast was omitted.

It was the consensus of the school authorities that the omission of breakfast exerted a significant, detrimental effect both on the attitudes and scholastic attainments of the boys.

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In 1953, U. S. hospitals cared for 20,183,827 patients, according to the American Hospital Association. This is the first year that the patient total has exceeded 20 million. In addition, 3,100,000 babies were born in hospitals.

Some $4,700,000,000 was spent to care for these patients and infants. In non-profit, general hospitals, $21.09 per day was spent on the average to care for each patient.

Variations in Quality of Cream Pies[1]

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THERE ARE many steps in the making of cream pies, variation in any one of which may cause considerable difference in the quality of the product. Studies have been made of the effect of variation in one selected step, but limited information is available on the effect of simultaneous variation in two or more of the steps. Among the factors listed by Sweetman (1) as affecting the consistency of a starch-thickened product are the concentration of the thickening agent, conditions of heating, and time and temperature of standing after heating. The consistency of the product may also affect the moistness of the underlying pastry. Furthermore, variation in the preparation of the filling and of the meringue may affect the characteristics of the pies.

Three experiments were planned, each involving slightly different combinations of factors expected to modify the quality of the finished pies. In the pastry, the kind and amount of fat and the fineness of the blend were varied; in the filling, the amount of flour, temperature of the milk, method of cooking, cooking time after thickening or after addition of the egg, and conditions of cooling the filling were varied; in the meringue, the time of adding sugar and speed of beating were changed.

Experimental Procedure

The proportions of ingredients in the pastry, filling, and meringue, together with a description of the procedures, are shown in Table 1. Variants were introduced in each of three experiments, either as to formula or procedure, as follows:

EXPERIMENT I—FILLINGS COOKED OVER DIRECT HEAT

Pastry: Size of fat particles—coarse, medium, fine
Filling: Amount of flour—30, 45, 60 gm.
Meringue: Beating time before adding sugar—5, 15 seconds
Speed of beating—high speed, medium speed followed by high

EXPERIMENT II—FILLINGS COOKED IN A DOUBLE BOILER

Pastry: Kind and amount of fat—hydrogenated fat, 564 gm., 468 gm.; lard, 468 gm.
Filling: Amount of flour—30, 45 gm.
Temperature of milk when dry ingredients were added—65°, 75°, 85°C.
Time of cooking after thickening—5, 15 min.
Meringue: No variation

EXPERIMENT III—FILLINGS COOKED OVER DIRECT HEAT

Pastry: No variation
Filling: Temperature of milk when dry ingredients were added—60°, 75°, 90°C.
Time of cooking after egg was added—1, 5 min.
Meringue: Temperature of filling when meringue was added—40°, 65°, 90°C.

The consistency of the hot filling was determined by a modification of the method of Grawemeyer and Pfund (2). The consistency of the cold filling was evaluated subjectively and by means of penetration. Subjective estimates were also used to evaluate the following qualities: flakiness of pastry, soaking of pastry, tenderness of meringue surface, and beading and drainage of liquid from meringue.

Results and Discussion

EXPERIMENT I

In Table 2 are given the mean values for pastry and fillings in Experiment I.

Pastry. The size of the fat particles in the pastry

[1] Based in part on the unpublished master's thesis of Jocelyn L. Adams. This is part of a larger project titled, "The Quality of Products Prepared from New York State Soft Wheat Flour: B. The Effect of Variations in Home-Preparation, Formulae and Procedures." Received for publication November 9, 1953.

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TABLE 1

Ingredients and procedure for making pastry mix, cream filling, and meringue

INGREDIENTS	PASTRY MIX*	CREAM FILLING†	MERINGUE‡
Pastry flour, N. Y. State	1200 gm.	30 gm. *or* 45 gm. *or* 60 gm.	
Fat			
Hydrogenated	468 gm. *or* 564 gm. *or*		
Lard	468 gm.		
Water	43 ml. (for 200 gm. mix)		
Milk		690 ml.	
Sugar		112 gm.	50 gm.
Salt		2 gm.	
Egg			
Yolk		52 gm.	
White			60 gm.
Cream of tartar			0.6 gm.

* *Procedure in making pastry:* The dry ingredients were blended (degree of fineness was a variant in Experiment I). The pastry shells were prepared by a standard method and were baked in 8-in. aluminum pie pans at 450°F. for 12 min.

† *Procedure in making cream filling:* The milk was heated to a predetermined temperature (varied in Experiments II and III); ½ c. hot milk was blended with the dry ingredients and returned to saucepan or to top of double boiler; mixture was cooked over direct heat until it reached 90°C., or in double boiler (time varied in Experiment II) after first thickening. Half of hot mixture was blended with egg yolk and returned to pan. Cooking was continued (time varied in Experiment III). The cooked filling was immediately poured into the pie shell and was meringued (cooling stage varied in Experiment III).

‡ *Procedure in making meringue:* Egg whites to which cream of tartar had been added were beaten (time varied in Experiment I), the sugar was added, and beating was continued until peaks which did not curl over could be formed. Mixture was transferred to waxed paper and spread uniformly to make a circle 8 in. in diameter. The paper with meringue was inverted over the pie filling, the paper removed, and the surface of the meringue smoothed. This procedure was followed so that the meringue and filling below would be of uniform thickness.

had no effect on flakiness. None of the crusts was scored "very flaky," but all were rated "flaky." Evidently other factors must be responsible for the degree of flakiness of the crust. The moistness of the crust increased as the amount of flour in the filling was decreased.

Filling. Increasing the amount of flour in the filling made it stiffer when hot and firmer when cold. The pies containing the least amount of flour were soft but did not run; the pies containing the most flour were too stiff for good quality. The consistency of the fillings was not affected by the variations in the meringues.

Meringue. When the egg white was beaten at high speed, the surface of the meringue was rated as "tender"; when the egg whites were beaten at medium, then high speed, the surface of the meringue was rated as "slightly tender." The time of adding sugar during beating had no effect on the tenderness of the meringue.

Beading of the meringue and drainage of liquid were not affected by any of the variables in Experiment I.

EXPERIMENT II

In Table 3 are presented the results of Experiment II.

TABLE 2

Mean values for measurements made on cream pie fillings in Experiment I

AMOUNT OF FLOUR	PASTRY SOAKING	AREA OF SPREAD OF HOT FILLING	PENETRATION	FIRMNESS OF GEL
gm.		*sq. cm.*	*mm.*	
30	little	124	7.3	slightly soft
45	very little	103	4.5	slightly stiff
60	very little	97	2.1	stiff

Pastry. The kind and amount of fat had no effect on the moistness of the bottom crust. This is contrary to the findings of Dunn (3) that the more fat in the pastry, the less the soaking of the bottom crust. Increasing the amount of flour in the filling slightly decreased the moistness of the bottom crust, but both types of pies averaged very little soaking. The temperature of milk and time of cooking of filling had no effect on the soaking of the crust.

Filling. Increasing the amount of flour made the fillings, both when hot and cold, firmer. Increasing the temperature of the milk before adding the dry ingredients had no effect on the consistency of the hot fillings but made the cold fillings firmer. Longer cooking time after thickening made the hot fillings less stiff and the cold fillings more firm. The fillings made with 30 gm. flour, milk heated to 65°C.,

TABLE 3

Mean values of observations made on cream pies in Experiment II

VARIATION	SOAKING OF CRUST	HOT FILLING (area of spread)	COLD FILLING	
			Depth of penetration	Firmness of gel
Amount of Flour				
		sq. cm.	*mm.*	
30 gm.	very little	96	11.6	soft
45 gm.	very little	79	6.2	slightly soft
Temperature of Milk				
65°C.	very little	90	9.8	soft
75°C.	very little	87	9.1	soft
85°C.	very little	86	7.4	slightly soft
Time of Cooking after Thickening				
5 min.	very little	81	10.1	soft
15 min.	very little	94	7.7	slightly soft

and cooked for 5 min. after thickening were the softest and were rated as "very soft." Those made with 45 gm. flour, milk heated 85°C., and cooked for 15 min. after thickening were the stiffest and were rated as "stiff."

EXPERIMENT III

In Table 4 are shown the results of Experiment III.

Pastry. The moistness of the bottom crust was not affected by the temperature of the milk, the duration of cooking after adding the egg, or the temperature of the filling when meringue was added. In all the pies, the amount of crust soakage was very little.

Fillings. Increasing the temperature of the milk had no effect on the stiffness of the hot fillings but made the cold fillings firmer. When the time of cooking after adding the egg was longer, the hot fillings were thinner and the cold fillings were firmer. The temperature of the filling when meringue was added had no effect on the firmness of the cold fillings. The fillings made with the milk at 60°C., cooked 1 min. after the egg was added, and meringue added when at 90°C. were the softest and were almost runny. Those made with the milk at 90°C., cooked 5 min. after the egg was added, and meringue added at 40°C. were the most firm and were rated as slightly stiff.

Meringue. The temperature of the milk had no effect on beading or amount of drainage of meringues. Increasing the time of cooking after adding the egg had no effect on the amount of beading but decreased the amount of drainage from the meringues. Higher temperature of the fillings when meringue was added increased the amount of beading but decreased the amount of drainage from the meringues. It is evident that a compromise must be made in choosing at which temperature the filling must be at the time it is meringued. From the results of this experiment, it is suggested that 65°C. is the temperature at which the beading and drainage together will be least evident.

TABLE 4

Mean values of observations made on cream pies in Experiment III

VARIATION	SOAKING OF CRUST	HOT FILLING (area of spread)	COLD FILLING (firmness of gel)	MERINGUE	
				Amount of beading	Amount of draining
Temperature of Milk					
		sq. cm.			
60°C.	very little	74	soft	little	some
75°C.	very little	74	soft	little	some
90°C.	very little	74	slightly soft	little	some
Time of Cooking after Egg Added					
1 min.	very little	65	soft	little	considerable
5 min.	very little	85	slightly soft	little	some
Temperature of Filling When Meringued					
40°C.	very little		slightly soft	none	considerable
65°C.	very little		slightly soft	little	considerable
90°C.	very little		slightly soft	little*	some

* There was considerable beading on these fillings when the filling was cooked for only 1 min. after beating the egg.

Conclusions

To obtain the maximum saving of time and ingredients and a product of optimum quality when making cream pies with soft wheat flour, the following procedures should be followed:

Pastry. Less lard than hydrogenated fat is needed to give crusts of equal flakiness. Blending the fat to particles of coarse to medium fineness is sufficient to give a flaky crust.

Filling. Cooking by direct heat is recommended. It is advisable to heat the milk to at least 85°C. before adding the dry ingredients, to cook rapidly to boiling, then to add the egg and cook the filling for 5 min. The filling should be cooled to about 65°C. before meringue is added.

Meringue. For tender crusts, the egg whites should be beaten at high speed throughout the beating period.

Summary

Equally flaky crusts were made when two amounts of hydrogenated fat and lard in lesser amount were used. Whether the fat particles were fine, medium, or coarse had no effect on flakiness.

Fillings cooked over direct heat were thicker than those cooked in the double boiler and took less time and flour. Fifty per cent more flour was required for fillings cooked in the double boiler to be of the same thickness as comparable fillings cooked over direct heat. Less flour was required for a filling of a given firmness when the milk was heated to 85° or 90°C. rather than to a lower temperature before the dry ingredients were added. The consistency of the hot filling could not always be used to predict the firmness of the cold filling. Cooking for 5 min. instead of 1 min. after the egg was added resulted in hot fillings which were more runny and cold fillings which were more firm.

Meringues had tender crusts when the egg whites were beaten at high speed throughout the beating period. The crusts were only slightly tender when beating was started at a lower speed and finished at high speed. Meringues placed on cold fillings had few beads but considerable drainage; when placed on hot fillings, they had more beads but relatively little drainage.

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Quick-Energy Food Combats Flyers' Fatigue

Duration of flight of the air-refuelable aircraft is limited only by the endurance of the pilot. Endurance and efficiency of the pilot over protracted periods is dependent on his resistance to fatigue. Such fatigue can be partially eliminated by the consumption of quick-energy nourishment.

The present cruising altitudes are such that continuous use of oxygen masks is necessary. It has been suggested that at such times as jet fighter aircraft descend to lower altitudes for refueling, food could possibly be ingested. However, due to the high fuel consumption of jet aircraft at low altitudes and the multitude of more pressing duties which the pilot will have while refueling, such a program is not feasible.

To give you an idea of the difficulties under which the present jet fighter pilot operates, imagine yourself completely dressed in all of your heavy winter clothing sitting in your easy armchair, with a tight fish bowl clamped over your head, trying to keep your chair tilted on its back legs, retuning your television every 5 min. for a seemingly endless 10 to 12 hr. As you can see, you will not have much time left for cookin'.

Our present research indicates that tube feeding through a plexiglas mask will be a solution under many conditions. The preparation of food for storage in fighter aircraft and later consumption from this tube will necessitate the solution of the problem of preparing palatable liquid foods and stabilizing that food for storage at −40° to a +160°F., and from sea level pressures to those at extreme altitudes. The problem is complicated by the extremely rapid changes of pressure and temperatures.

The requirement for liquids is greater at altitude than on the ground due to an insensible perspiration created in drying atmospheres under conditions of stress and in the partially pressurized cockpit. The present status of investigation in our altitude chamber trials proves that a tube-type of drinking has some advantages and prospective application in the fighter situation of extreme altitudes.

Two alternate assemblies of a retractable tube system for a supply of drinking water have been fabricated for cockpit trials. This system incorporates a water reservoir tank, pressurized to approximately 4 lb. with oxygen or air, and connected by a flexible tube to a valved hand-set with plastic-tipped mouthpiece. A small tubular heater is interposed in one of the water lines with a switch control to warm the water flow sufficiently to heat beverages stored in the cockpit. A new type, full-face pressure oxygen mask containing a liquid feeding aperture has also been developed. The plastic face piece has been designed for attachment to the present standard crash helmet. Oxygen pressure is retained by a soft rubber diaphragm designed around the facial margin. In preliminary tests of the present models, plastic drinking tubes were successfully used at pressure breathing chamber altitudes.

Simultaneously, the development of palatable fluid foods to appease hunger and give the pilot that needed lift are under way to provide a variety of liquid foods for test runs. Even though substantial progress has been made, we have barely scratched the surface for the needs of the pilot in the supersonic aircraft.—*Edythe Robertson, Chief, Air Force Feeding Service Section, U. S. Department of Air Force, speaking before the Third Annual Cookbook-Recipe Conference sponsored by the United Fruit Company, in New York on November 7, 1953.*

Ascorbic Acid Retention in Frozen Concentrated Citrus Juices[1]

RICHARD L. HUGGART, DOROTHY A. HARMAN, and EDWIN L. MOORE

Florida Citrus Experiment Station, Lake Alfred

CONSUMERS of citrus fruits are interested in the ascorbic acid content of the juices. With the increasing popularity of frozen concentrated citrus juices, which often are stored at various temperatures for prolonged periods, knowledge of their retention of ascorbic acid both during storage and after reconstitution for serving is important. The purpose of this investigation was to determine retention of ascorbic acid in concentrates prepared from several commercial varieties of citrus fruits and stored under known conditions and periods that approximate those to which concentrates may be subjected by manufacturers, wholesalers, retailers, and consumers.

Moore, Huggart, and Hill (1) reported no appreciable decrease in ascorbic acid in experimental packs of Florida frozen orange, grapefruit, and tangerine concentrates stored for six months at −8°, 10°, 20°, 32°, and 40°F. DuBois and Kew (2) stored Florida frozen citrus concentrates at −20°, −8°, 0°, 5°, 10°, 15°, 20°, 25°, 45°, and 75°F. for periods up to eleven months. They stated that ascorbic acid losses were exceedingly low even at the higher temperatures of storage, and that a more detailed report would be published later. Cotton *et al.* (3) reported excellent retention of ascorbic acid in Florida frozen orange and tangerine concentrates stored at 0° and 40°F. Roy and Russell (4) cited unpublished data from the laboratories of a commercial corporation in Plymouth, Florida, which indicated a 100 per cent retention of ascorbic acid in 41° to 42°Brix orange concentrate held at −10°F. for twelve months. Miller and Marsteller (5) purchased 6-oz. cans of frozen orange concentrate from retail stores and studied the loss of ascorbic acid in the thawed concentrates and their corresponding reconstituted juices at 32°, 41°, and 77°F. for various periods of time. They reported that the orange concentrate and corresponding reconstituted juice were held at 41°F. for four days without serious loss of ascorbic acid and without impairment of flavor, and that similar results were obtained after eight days' storage at 32°F. The Council on Foods and Nutrition of the American Medical Association (6) reported that it is reliably estimated that approximately 98 per cent of the ascorbic acid content of the fresh juice may be retained in the frozen concentrated orange juice during processing when modern acceptable methods are used. This report stated further that when the concentrated juice is held in storage at the freezing point, or below, there is practically no loss of ascorbic acid, and that if the reconstituted juice is placed in the refrigerator at 40°F., ascorbic acid losses will be negligible.

EXPERIMENTAL PROCEDURE

The six packs of frozen concentrated citrus juices used in this investigation were processed in the pilot plant at the Citrus Experiment Station, using an evaporator described by Atkins, Wenzel, and Moore (7). These packs included the following citrus varieties: Hamlin, Pineapple, and Valencia oranges, Dancy tangerines, and Duncan and Marsh grapefruit. The processing procedure used has been outlined briefly by Moore, Huggart, and Hill (1). After the packs had been in storage at −8°F. for one day, samples were stored at −8°, 10°, 20°, 32°, and 40°F.

The ascorbic acid content of the concentrates was determined by titrating 5 ml. reconstituted juice, diluted with an equal volume of a mixture of 3 per cent metaphosphoric acid and 8 per cent acetic acid, with 0.05 per cent 2,6-dichlorophenolindophenol that had been standardized against crystalline ascorbic acid. The reconstituted juice consisted of 25 gm. concentrate made up to

[1] Cooperative research by the Florida Citrus Commission and the Florida Citrus Experiment Station. Florida Agricultural Experiment Station Journal Series, No. 165. Received for publication December 9, 1953.

TABLE 1

Initial analyses of the concentrated citrus juices one day after concentrating and freezing

VARIETY OF FRUIT	DATE OF PROCESSING	°BRIX*	TOTAL ACID	MATURITY RATIO‡	pH	ASCORBIC ACID
			%†			*mg./100 gm.*
Hamlin orange	1/26/50	42.3	2.78	15.2	3.6	205.8
Pineapple orange	2/15/50	42.1	2.98	14.1	3.7	211.5
Valencia orange	4/20/50	42.2	3.25	13.0	3.6	158.5
Dancy tangerine §	1/25/50	42.1	2.93	14.4	3.6	73.9
Duncan grapefruit §	2/21/50	42.1	4.64	9.1	3.1	136.2
Marsh grapefruit §	2/28/50	41.9	4.03	10.4	3.3	129.4

* 28°C., corrected for acid.

† As anhydrous citric acid.

‡ Brix: acid.

§ Sugar added before concentration to increase the Brix: acid ratio. The Florida Citrus Code of 1949 prohibits the addition of sugar to frozen concentrated orange juice.

100 ml. with deionized water. The results were calculated as milligrams of reduced ascorbic acid per 100 gm. concentrate.

RESULTS AND DISCUSSION

Some of the initial analyses of the concentrated juices, together with the dates on which the fruit was processed, are presented in Table 1. It will be noted that all concentrates were approximately 42°Brix. The Dancy tangerine concentrate had a lower ascorbic acid content than the concentrates prepared from the other five varieties. With 42°Brix (fourfold) concentrate, the consumer adds three cans water to each can of concentrate.

The percentage retention of ascorbic acid in the concentrates after storage for twelve months at temperatures of −8°, 10°, 20°, 32°, and 40°F. is given in Table 2. Analyses were made for ascorbic acid content of the concentrates, initially, after 1 and 2 weeks, and after 1, 2, 3, 4, 5, 6, 8, 9, and 12 months' storage at the different temperatures. However, because of the high retention of ascorbic acid found, only the data for the twelve-month storage are given in Table 2. It will be noted that the Dancy tangerine concentrate showed a slightly lower retention at all storage temperatures than the concentrates prepared from the other varieties of fruit. The average retention of ascorbic acid in all concentrates stored at −8°F. for twelve months was found to be slightly over 98 per cent. Retention decreased gradually with a higher storage temperature to slightly over 95 per cent average retention for twelve months' storage at 40°F.

Although there was no appreciable decrease in ascorbic acid content, enzymic action on the pectic constituents caused varying degrees of clarification and gelation in the concentrates stored at the higher temperatures.

The percentage retention of ascorbic acid in reconstituted citrus juices after storage for two days in a household electrical refrigerator at approximately 50°F. is presented in Table 3. The temperature of 50°F. was chosen as representative of a high temperature for a household electrical refrigerator. These reconstituted juices were prepared from concentrates stored at temperatures of −8°, 10°, 20°, 32°, and 40°F. for fifteen to eighteen months. Deionized water was used to reconstitute the concentrates, and the reconstituted juices were stored in the refrigerator in closed 1-qt. glass jars.

It will be noted from Table 3 that after two days' storage at 50°F., all reconstituted orange and grapefruit juices showed over 94 per cent retention of ascorbic acid, and the reconstituted tangerine juices showed over 91 per cent retention. Analyses extended beyond the two-day period showed a high retention of ascorbic acid, but the juices were beginning to ferment at the time of the later examinations. This would indicate that reconstituted citrus juices allowed to stand in a household refrigerator do not undergo appreciable ascorbic acid losses up to the time the juices ferment or otherwise become unpalatable.

TABLE 2

Percentage retention of ascorbic acid in 42°Brix (fourfold) concentrated citrus juices after storage for twelve months at various temperatures

STORAGE TEMPERATURE	ASCORBIC ACID RETENTION						
	Hamlin orange	Pineapple orange	Valencia orange	Dancy tangerine	Duncan grapefruit	Marsh grapefruit	Average
	%	%	%	%	%	%	%
−8°F.	100.0	98.7	99.2	94.0	98.4	98.8	98.2
10°F.	99.0	98.0	97.9	93.5	97.9	98.8	97.5
20°F.	98.7	96.7	96.7	90.7	98.1	98.3	96.5
32°F.	97.6	96.0	96.2	90.9	97.7	98.6	96.2
40°F.	97.1	94.7	95.9	89.7	97.1	97.1	95.3

TABLE 3

*Percentage retention of ascorbic acid in reconstituted citrus juices after storage for two days in a household electrical refrigerator at approximately 50°F.**

PREVIOUS STORAGE TEMPERATURE OF CONCENTRATE	ASCORBIC ACID RETENTION					
	Hamlin orange	Pineapple orange	Valencia orange	Dancy tangerine	Duncan grapefruit	Marsh grapefruit
−8°F.	97.8	95.8	95.4	92.7	98.0	96.3
10°F.	94.5	94.7	94.7	91.2	97.4	96.6
20°F.	96.5	95.6	94.8	94.6	99.7	98.3
32°F.	96.5	95.5	95.1	92.4	98.1	96.2
40°F.	98.1	95.6	94.8	91.9	96.7	95.7

* The reconstituted juices were prepared from 42°Brix (fourfold) concentrated citrus juices stored at various temperatures for fifteen to eighteen months.

SUMMARY

Freshly frozen 42°Brix (fourfold) Hamlin,

Pineapple, and Valencia orange, Dancy tangerine, and Duncan and Marsh grapefruit concentrates were stored at −8°, 10°, 20°, 32°, and 40°F. temperatures which approximate those to which concentrates may be subjected by manufacturers, wholesalers, retailers, and consumers. Average retention of ascorbic acid in all concentrates stored at −8°F. for twelve months was slightly over 98 per cent, decreasing gradually with higher storage temperature to slightly over 95 per cent average retention for twelve months' storage at 40°F.

Reconstituted juices were prepared from the above concentrates after storage for fifteen to eighteen months at the above temperatures. After two days' storage at 50°F., all reconstituted orange and grapefruit juices showed over 94 per cent retention of ascorbic acid, and the reconstituted tangerine juices showed over 91 per cent retention of ascorbic acid.

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Nutrition Program in Ecuador

The government of Ecuador is trying to improve the diet of the people and to get them to make better use of the foods that are available to them. In January, 1951 it opened a National Institute of Nutrition. The original plans and project were drawn up by Dr. Robert S. Harris of the Massachusetts Institute of Technology.

The nutrition program falls into three phases. The first is to make a scientific analysis of the nutritive value of the various foods of the country. The second is, by sample surveys, to find out what the people are eating. The third stage is an educational one.

The first part of the campaign—the analysis of available foods—is being conducted under the direction of Dr. Hazel Munsell, who was temporarily assigned to the Institute by the World Health Organization (WHO). Each food is subjected to thirteen tests to establish its content of water, fat, crude fiber, nitrogen, ash, calcium, phosphorus, iron, carotene and vitamin A, thiamine, riboflavin, ascorbic acid, and niacin. To get samples, Dr. Munsell and her assistants tour the markets in Quito as well as the countryside.

Their tests have confirmed that Ecuador has a good supply of natural highly nutritive foods. The *naranjilla*, for example, a fruit peculiar to Ecuador and a member of the tomato family, was proved to be rich in ascorbic acid and a good substitute for orange juice when this was unobtainable or too expensive.

The Food and Agriculture Organization (FAO) as well as WHO is aiding the Ecuadorean authorities in a wide range of activities which all have a bearing on food. One mission is working on improvement of milk—both quantity and quality—milk pasteurization, agricultural statistics, fisheries, and sheep stock.

An FAO expert is advising on two of the stages of the nutrition program already mentioned—the house-to-house survey and the compilation of the data from this survey, and the educational program.

The house-to-house survey is not limited to one casual visit. A complete record over seven days or more is kept of what food is bought, how it is prepared and eaten. Side by side with this record, a note is taken of the family's medical record.

The calls on housewives in their homes are naturally used to give useful advice on dietary questions. In addition, there are special courses for student nurses and weekly chats for expectant mothers. Since most of the women who come are from the poorer sections, the advice is of an extremely practical kind and shows how better food value can be obtained without additional expense simply by making better use of foods, such as greenstuffs and fruit which are largely wasted or ignored. For example, turnips form a frequent item in the average Ecuadorean diet. But invariably the nutritive tops of the plant are discarded and only the root, which is less valuable, is eaten.

Better nutrition, safer milk, increased crops, improved herds all add up to healthier families and, in consequence, a richer nation.—*From WHO Newsletter 6: November–December, 1953.*

Effects of High-Fat Diets on Serum Lipids

Animal vs. Vegetable Fats[1]

LAURANCE W. KINSELL, M.D.

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FOR some years, the relationship of diet to the level of lipid substances in the blood and to the deposition of lipids in the walls of the blood vessels has been a subject of major interest and of major controversy. One can cite evidence to support or refute the contention that the amount of dietary fat and/or dietary cholesterol are of major importance in determining the level of plasma lipids and in determining predisposition to atherosclerosis.

It has long been known that fats of vegetable origin contain essentially no cholesterol, as opposed to fats of animal origin which contain, for the most part, considerable quantities of this material. Despite this, it has been stated that a high-fat diet, regardless of the source of fat, would predispose towards elevation of serum lipids (1, 2).

The present paper will describe the findings in patients maintained on chemically constant formula diets containing large amounts of fat, all of vegetable or of animal origin, respectively; also, findings in patients maintained on mixed diets, constant in a diabetic but not in a quantitative chemical sense, also containing large amounts of fat of animal or vegetable origin, respectively.

EXPERIMENTAL PROCEDURES AND FINDINGS

The high-fat formula diets were designed to permit metabolic studies dealing with the effects of hormonal agents on fat oxidation in human subjects. In the course of these studies, it was noted that patients receiving the high-fat diets (all of the fat being of vegetable origin) without exception had a major fall in the levels of cholesterol and phospholipids in the plasma (3–6). Initially, it was thought that the decrease in the level of serum lipids was referable to the administration of specific hormonal

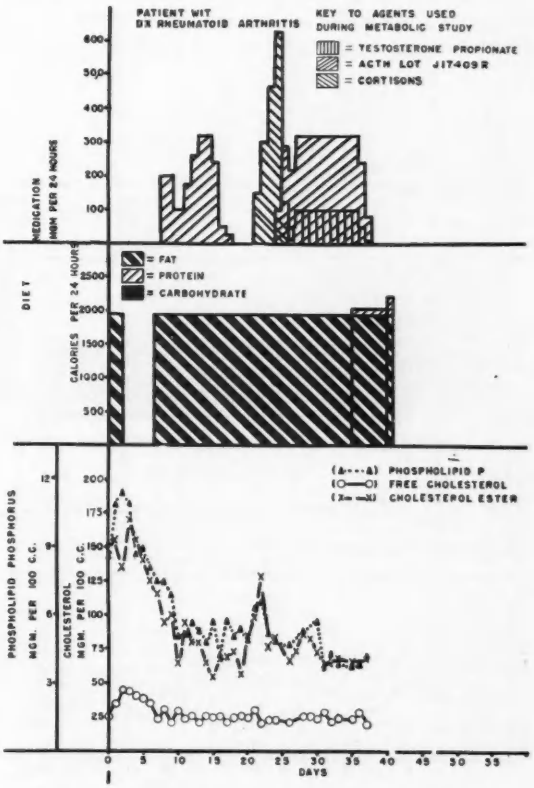

FIG. 1. *Fall in plasma cholesterol and phospholipids in a patient with rheumatoid arthritis during the ingestion of a "pure (vegetable) fat" formula diet.*

[1] These studies were carried out by members of the Institute for Metabolic Research, including: Drs. Harry E. Balch, Gilbert C. Cochrane, Nadine Foreman, John J. Jahn, John W. Partridge; and with the technical assistance of June Bilisoly, Marjorie Coelho, George Fukayama, Eleanor Kipp, Florence Olson, Sammie Rattliff, and Sadie Smyrl.

Grateful acknowledgment is made to Mead Johnson & Company for supplies of Casec; to Circus Foods, Incorporated, for supplies of nuts; to Associated Concentrates for supplies of lecithin; to Armour Laboratories for supplies of egg yolks and soybean sterols; and to The Borden Company for supplies of powdered milk and instant coffee.

This work has been supported in part by grants from the National Institutes of Health and the Armour Laboratories. Presented at the 36th Annual Meeting of The American Dietetic Association in Los Angeles, on August 26, 1953.

agents. Subsequently, however, it was found that the same change in the lipid pattern occurred in individuals receiving the diet alone, without any kind of hormonal or other agents.

The chemical methods used in the examination of the blood in this and other studies have been described elsewhere (7).

Among the patients studied were individuals with such diverse conditions as diabetes mellitus, thyrotoxicosis, myxedema, nephrosis, retinitis pigmentosa, rheumatoid arthritis, and so on.

The first patient in whom the change in serum lipids was noted was a middle aged woman with rheumatoid arthritis. For a period of thirty days, she was maintained on a formula diet containing nothing but vegetable fat (plus supplementation with essential minerals and vitamins). On this diet, her plasma cholesterol and phospholipids fell in a major degree as noted in Figure 1. It was thought that the change in plasma lipids was due to the administered hormones.

One of the first patients in whom the high vegetable lipid diet was administered without any superimposed hormones or other medication to permit evaluation of dietary effects *per se* was a woman with myxedema. In this patient, as in the one noted above, a major fall in lipids occurred (*Fig.* 2). From this observation, it seemed probable that the change was a function of one or more components of the high vegetable lipid diet.

To ascertain whether the basic disease state of the individual was a factor in determining the type of effect to be obtained, a variety of patients was studied, including individuals with hyperthyroidism, nephrosis (*Fig.* 3), diabetes in association with advanced peripheral vascular disease, and many others. To date, without exception, a significant fall has been observed in all persons maintained on formula diets containing no animal fat and relatively large amounts of vegetable fat. Significant decrease in serum cholesterol and phospholipids has also been noted in diabetic atherosclerotic patients receiving mixed diets containing large amounts of vegetable fat and no, or negligible, animal fat.

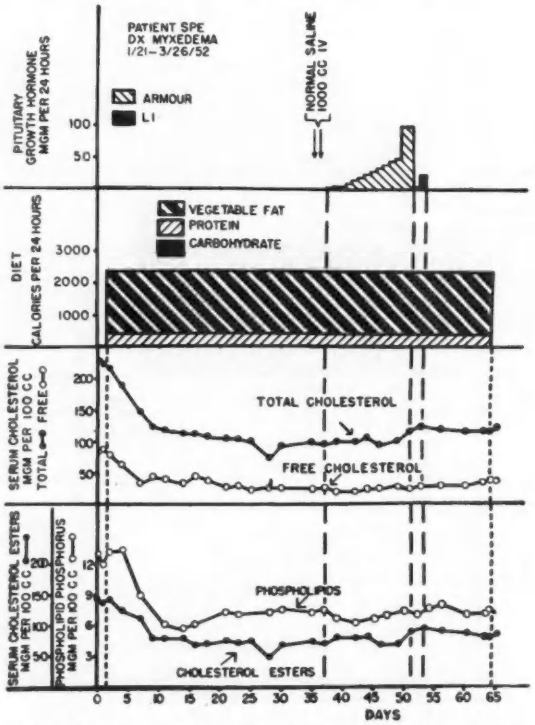

FIG. 2. *Fall in plasma cholesterol and phospholipids in a patient with myxedema during the ingestion of a high vegetable fat intake.*

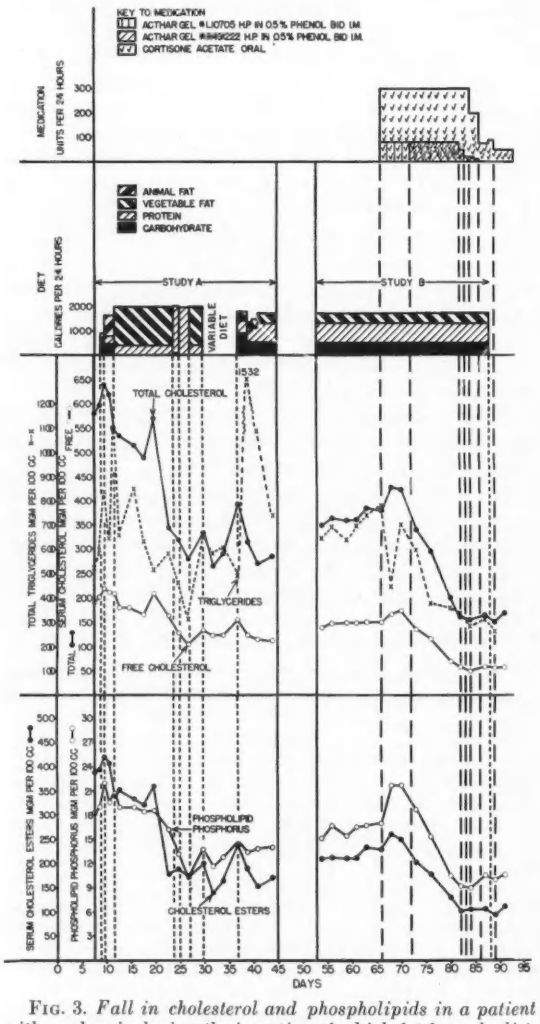

FIG. 3. *Fall in cholesterol and phospholipids in a patient with nephrosis during the ingestion of a high-fat formula diet. The level of the plasma triglycerides did not appear to be related predictably to diet or medication.*

In Figure 4 are shown studies in a patient who intermittently received diets identical in terms of protein, fat, and carbohydrate, but in which the source of the fat was alternately of vegetable and animal origin. It is apparent that the serum lipids rose to essentially the levels noted on an average mixed diet when the animal fat was administered, and that a significant fall in the lipids occurred when the source of fat was of vegetable origin.

DISCUSSION

From the foregoing, there appears to be little question that the administration of diets containing large amounts of fat of vegetable origin is associated with a major fall in the level of cholesterol and phospholipids in plasma. At least two basic explanations can be invoked to account for such a finding. The first would be that the change is due merely to a lack of dietary cholesterol. The second would be that some constituent of the vegetable lipid diet is, in a positive way, responsible for these changes.

Peterson has demonstrated that the administration of crude soybean sterols to experimental animals, receiving a diet which would otherwise result in the production of atheromatous changes in vessels, completely prevents such changes (8). It is possible that some constituent of the vegetable lipid used in our studies might act in a similar fashion. To test this hypothesis, a variety of extractives of vegetable lipids, both sterol and phospholipid in nature, are in the process of evaluation. To date, no clear-cut and consistent pattern has emerged, although some of the results are of considerable interest (9).

SUMMARY

The administration of formula or mixed diets containing large amounts of vegetable fat and no animal fat to human subjects with a wide variety of diseases resulted in a major decrease in the level of certain of the serum lipid components. The precise explanation for these changes is still to be obtained.

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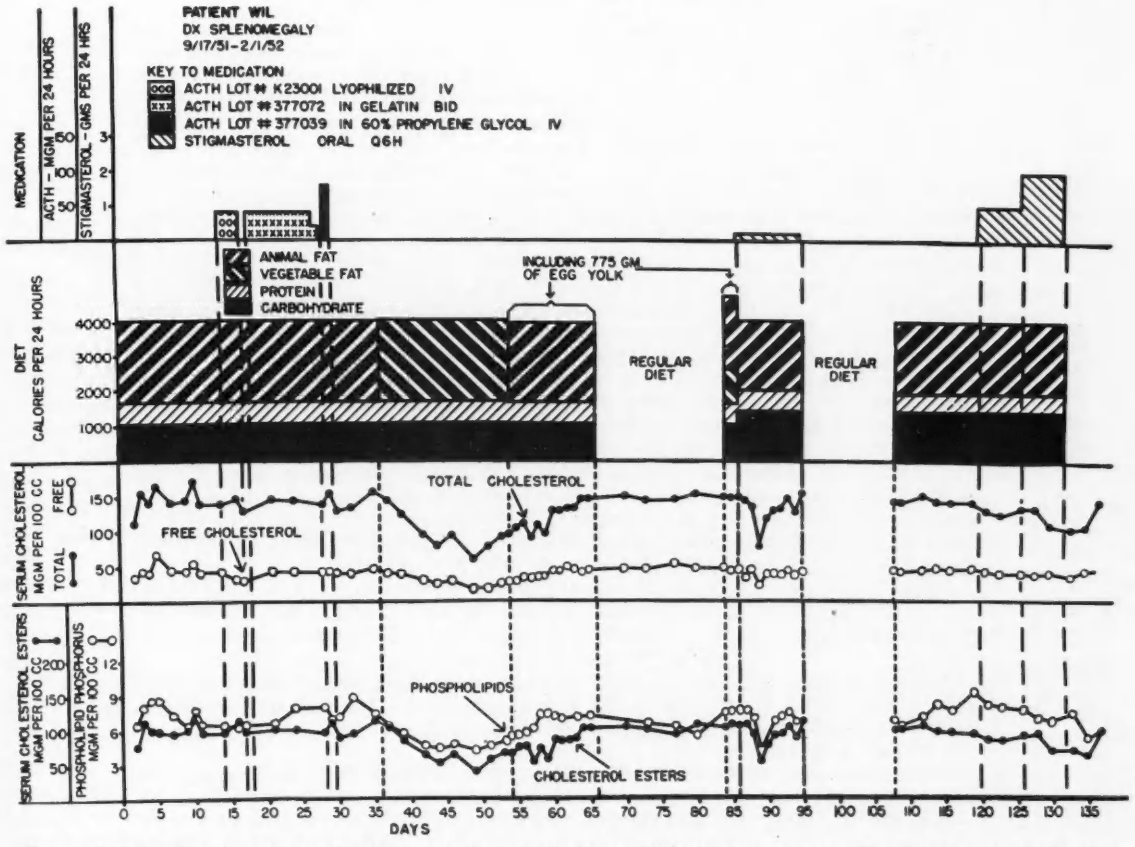

FIG. 4. *Relationship of vegetable and animal fat to the level of plasma lipids in a young man. The cholesterol and phospholipids fell during the ingestion of the vegetable fat and rose again when the fat was of animal origin. The significance of the changes observed during stigmasterol ingestion requires further clarification.*

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BIOGRAPHICAL NOTES ON THE HISTORY OF NUTRITION

John Huxham—1692–August 11, 1768

Experimental clinical data to show the effectiveness of lemon juice in scurvy was first presented by Lind in 1753, but others before him had proposed the use of fruits and vegetables in treating this disease. One of these was John Huxham. When he saw the return of Admiral Martin's fleet after a voyage of only thirteen weeks, with twelve hundred men suffering from scurvy, Huxham recommended the use of vegetables to prevent scurvy and urged the Navy to have a supply of vegetables always on hand.

We wonder what observations Huxham had made which led him to this recommendation! It seems likely that it was based on some observation, since that was one of the characteristics which distinguished him from other physicians of the day. He did not rely on the teachings and writings of others, but made his own observations.

However, his fame rests not on his advice on the use of vegetables as a preventive of scurvy (he published a book on this in Venice in 1776, *De Scorbuto*), but on "An Essay on Fevers and Their Various Kinds" (1775) which contained many careful and original observations on infectious diseases. This work was translated into German, French, and Portuguese and was ranked as the best of its kind in the first half of the eighteenth century. The story is told that the Portuguese translation was made at the request of the King of Portugal. The Queen was very ill with fever and as a last resort, the physician attached to a British factory was consulted. Under his treatment, the Queen recovered and when questioned on his success, he said that he had learned the treatment from Huxham's book.

The exact date of Huxham's birth in 1692 is not known. He was born in Tolnes, Devonshire, the son of a butcher, and was early left an orphan. His guardian was a non-conformist minister who must have seen that he received a sound education, for he showed ability to write and read Hippocrates in the original. In 1715, he went to Leyden, Holland, and studied under Boerhaave. He received his medical degree from Rheims in 1717.

He set up his medical practice at Plymouth, but was interested in the physical sciences as well as medicine. He made observations in meteorology and in physics, was elected to the Royal Society in 1739, and in 1775 received the Copley Medal for his observations on antimony.

Huxham gave a careful description of colic caused by drinking cider (1739) but failed to discover that it was caused by lead from the vats and presses used in cider-making. He also gave an excellent description of diphtheria in a book published in 1757, *On the Malignant Ulcerous Sore Throat.*

As was the custom for physicians in those days, Huxham walked with a gold headed cane and wore a scarlet coat; his footman followed carrying his gloves.

REFERENCES: Moore, N.: "John Huxham." *In* Dictionary of National Biography. Vol. 28. New York: Macmillan and Co., 1891, p. 363; Macmichael, W.: "John Huxham." *In* Lives of British Physicians. London: John Murray, 1830.—*Contributed by E. Neige Todhunter, Ph.D., Dean, School of Home Economics, University of Alabama, Tuscaloosa.*

You Are Dealing with People[1]

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IN dealing with people, we may classify them into two groups according to our relations with them. First, there are those with whom we have employment relations, and second, there are the people with whom we have service relations. Analysis also suggests that the first group may be further divided into three sub-groups according to rank or status in an organization.

EMPLOYMENT RELATIONSHIPS

The first consists of our employers or superiors. They are the bearers of authority to whom we are subject. They exercise guidance over us because we require direction from a source outside ourselves. This relationship involves certain conduct on the part of both superior and subordinate. It is only when the bearer of authority gives direction and expects compliance, and the subject of authority willingly follows such direction, that a sound relationship of authority and responsibility exists.

The second sub-group consists of our own subordinates, those whom we direct and supervise. Here the previous situation is exactly reversed. We become the bearers of authority; other persons become the subjects of it. It should be observed, however, that they are subjects of *our authority* and not of us as individuals. By definition, authority is right and power by virtue of rank and status.

The distinction between compliance with authority and subservience to an individual is of great importance in this relationship. It is the distinction between domination and leadership. Domination is control by the forcible assumption of authority by one person over the affairs of another. It is the relationship of master and subjects in which the latter obey because they have no alternative. It is imposed power without any practical recourse.

Leadership, on the other hand, is generated from within a group—it is a reciprocal relationship. A leader thus conceived is not one who has followers because he asserts his will over them. Rather he is one who combines the different wills of his subordinates into a driving force in the furtherance of a common cause. Accordingly, a leader not only influences his group but, at the same time, he is influenced by it.

Thus when we are "dealing with people" in the superior-subordinate relationship, leadership implies followership. One is as important as the other. Those who are led do more than merely attend and obey. They participate in leadership by a process of mutual stimulation through the interplay of relevant individual differences. Only by integrating and giving direction to the combined experience and competence of all members in a group can the full power of leadership be realized.

The third class in the employment relationship includes our equals in rank and position. In more precise technical language, they are the people who are coordinate with us—neither superiors nor subordinates. Our relations with them are in the horizontal plane, sidewise—neither up nor down. From them we take no orders, nor do we give them any. The manifestation of this relationship answers the searching question: How do we get along with our associates?

In our relations with "these people," that is, our equals in status in an organization, how do we *deal* with them? I suggest we deal with them in two ways. The first is by an attribute of personality we call cooperation. Cooperation is manifested in several ways. It is evidence of one's capacity to link his will with the purpose of others; to engage in a common task guided by understanding and a gift for ready participation; to adjust oneself to group decisions without complaint or rancor. In short, to say with Kipling:

> I shall know that your good is mine;
> You shall know that my strength is yours.

This is the essence of cooperation.

Second, we deal with our coordinates by a process of horizontal communication. That is, by the exchange and integration of information and ideas among the individuals who have equal or parallel standing in an organization. This purpose is accomplished by frequent and close personal associa-

[1] Presented at the 36th Annual Meeting of The American Dietetic Association in Los Angeles, on August 25, 1953.

tion, conferences, and the circulation of reports and proposals. It is encouraged by a genuine desire and attempt to understand one another's job better. The best method of horizontal communication is usually one with the least formality. Integration of ideas and concurrence and harmony in action are not so much the product of artificial devices as they are the result of the habit of working together in the achievement of goals mutually advantageous.

SERVICE RELATIONSHIPS

So far we have considered our dealings with persons with whom we have employment relations, which brings us to the second group: those with whom we have service relations. They are our clients and the general public.

Clients are the people to whom we render professional service. They are patients in hospitals, patrons of food service establishments, students, and interns. If we deal with them on a "professional" basis as we say we do, then we need to understand what this expression means. To be "professional" implies two things. Our calling becomes a profession first, when we who practice it are recognized for our special knowledge, training, and skill put to use in service to others, and second, service must be accepted and relied on with confidence and trust.

To deal with people professionally is to pursue one's calling in a manner that merits such confidence and trust. When the recipient of professional advice follows the directions given him, he does so in full faith that it is for his benefit rather than for the benefit of the one who gives it, though the latter obviously benefits as well. True professional pride prevails when a sense of satisfaction in having rendered a successful specialized service to others transcends the consciousness of personal gain.

With the public, the second group with which we have service relations, our dealings may be described as social behavior. This behavior is also called "public relations" which may be planned as a function of management, or it may be spontaneous, which is most usual with individuals.

Public relations are both a process and a product of our contacts and associations with people, formally and informally. Most of us crave the "good will" and understanding of others. We endeavor to obtain such recognition inwardly through self-analysis and outwardly through public acceptance of our services and actions. The reactions of people to our competence and behavior leave impressions that find expression in opinions. Thus "public opinion" about us becomes our reputation concerning which we may sometimes wonder why it is as it is. When we "deal with people" in the realm of public relations, we may well say with Robert Burns:

> Oh wad some power the giftie gie us
> To see oursel's as others see us!
> It wad frae monie a blunder free us,
> And foolish notion.

It is obvious that in none of the situations that have been described—employment, professional, or public—can there be satisfactory dealings in isolation. Coupons on passenger tickets for public transportation carry this statement, "not good if detached." This means that the value of the coupon is determined by its relationship to the whole ticket. So it is in our dealings with people. If we dwell in seclusion, mentally, physically, or spiritually, we are "not good" because of our detachment.

So we come to the other principal consideration of this discourse: *how* do we deal with people? We deal with them in three ways, namely, by words, deeds, and personality.

WORDS AS VEHICLES OF COMMUNICATION

Words are the vehicles of communication without which there can be neither leadership, followership, or understanding. Words mean nothing by themselves; only when used to stand for something do they have meaning. Thus they are instruments of communication employed to convey facts, purposes, and attitudes. Therefore, the choice of words is extremely important. Facts couched in ambiguous terms are apt to be misinterpreted or meaningless. Words must "reach the mind of the receiver" and be "in tune" with his intellectual level and experience.

Personal communication may be likened to communication by radio and television. In both instances there must be an adequate transmitter and a functioning receiver, each in tune with the other. The message that is carried must be acceptable at the receiving end, else it is "tuned out." Whether we cannot or will not give attention makes no difference. Communication is ineffective in either case: it is "not good if detached."

As with facts, so also with purpose. Purpose is vital to meaning because it is the answer to the instinctive question, "Why?" Hence, in communicating purpose, wrong words may nullify that which was intended because they fail to make sense or to be accepted by those to whom they are spoken or transmitted. Words must be relevant to their situation, which is to say, timely, challenging, and reassuring in the sense of satisfaction in affirmative response and action.

Words also convey feelings and attitudes in addition to facts and purpose. More often than we realize, we *think* with our feelings. We make up our minds on impulses, whims, likes, and dislikes. When feelings are translated into attitudes and the latter into subjects of communication, it is difficult to make words meaningful because feelings are inescapably personal.

Feelings cannot be eliminated from human communication. They can be controlled and fashioned to

help rather than hinder the process. Words should impart sincerity and trust; when they foster doubt, suspicion, or questions of ulterior motives, mutual confidence is destroyed and emotion supplants reason in reciprocal conduct. Language serves us not only to express something, but to express ourselves. Hence the choice of words, as they reflect attitudes and sentiments, is extremely important.

DEEDS IN DEALING WITH PEOPLE

We deal with people not only by what we say but by what we do. There is much truth in the old saying that "actions speak louder than words."

> Our acts our angels are, or good or ill,
> Our fatal shadows that walk with us still.
> —Fletcher, *Honest Man's Fortune*

Deeds are manifestations of obligatory duty to which we are bound by reason of occupations or assigned tasks. The quality of our service establishes our dependability, which means reliability and trustworthiness. In failing to discharge our responsibilities properly and efficiently, redress is exacted from us in some form, directly or indirectly. We lose our jobs, our patrons, and soon our confidence and courage. Again, we are "not good if detached."

PERSONALITY IN PUBLIC RELATIONS

Finally, we deal with people by our personalities. Personality may be defined as that part of one's character that is workable in influencing other people. Dealing with people is a matter of influencing them, for it is through influence that they respond, affirmatively, negatively, or not at all, which is a kind of response in itself.

Despite the fact that there are numerous qualities of personality with which an individual can influence people favorably and constructively, certain characteristics stand out more than others:

(a) *Personal magnetism*—the power to attract the respect and confidence of others. Its principal elements are emotional balance and good manners.

(b) *Enthusiasm*—an inward intensity of feeling in behalf of a cause or subject, and an outward expression of keen and ardent interest.

(c) *Ability to inspire*—the capacity to exert an enlivening influence upon people, a quality characterized by competence in knowledge, expression, and skill.

(d) *Persuasiveness*—the ability to induce another to believe or act in a certain way. The persuasive person is one who can discern relevant from irrelevant facts in a given situation, and who can marshal and present them convincingly.

(e) *Forcefulness*—the power of effective action identified by the habits of industry, diligence, and devotion to duty.

(f) *Tact*—a sensitive mental awareness of what is appropriate to do or say in dealing with others in order to avoid giving offense. The French call it *savoir faire*, how to act under all circumstances. Tact is based on judgment, self-control, considerateness, thoughtfulness, and regard for others.

PHILOSOPHY OF WORK

As we deal with people in these various relationships, we need a philosophy of our daily task. Life is not a destination but a pilgrimage between the daybreak of childhood and the shadows of advancing age. Whatever we choose to do on this journey is ours to do but for a little while.

One of our most precious possessions is our vocation. It is precious because through it we make our living, live our lives, and serve our fellow men. If we are competent in it because of our talents and opportunities, we cherish our successes in our hearts; in our minds we determine to overcome our weaknesses. We did not create our respective vocations; they are loaned to us by the society in which we live, to be pursued only for the duration of our travelling time. Sooner or later we must relinquish them and render an accounting of our stewardship. When at last we put down the load for others to carry, may it be with a realization that we have fufilled the obligations we automatically accepted when we entered upon our calling.

So as *you* travel along, remember, "You're dealing with people." What people? All people. When? All the time. But your efforts to serve them, to work with them, and to influence them are "not good if detached."

Coffee in Seventeenth Century London

A clipping from a recent issue of the *New Yorker* (February 20, 1954) contributed by Mary B. Huddleson, Washington, D. C., highlights some of the early uses of coffee:

> The first newspaper advertisement for coffee which appeared in a London newspaper in 1637, described it as a "very wholsom and Physical drink, having many excellent vertues, closes the Orifice of the Stomack, fortifies the heat within, helpeth Digestion, quickneth the Spirits, maketh the heart lightsom, is good against Eyesores, Coughs, or Colds, Rhumes, Consumptions, Headach, Dropsie, Gout, Scurvy, Kings Evil, and many others." Dr. William Harvey, who discovered the circulation of the blood, was a devotee of the bean. "This little fruit is the source of happiness and wit," he said as he lay dying. He had fifty-six pounds of coffee on hand at the time of his death, and he bequeathed this treasure to his colleagues at the London College of Physicians, in order that, as long as the supply lasted, they might forgather once a month and drink a cup in his memory.

Editorial

Duties and Responsibilities

As long ago as 1943, The American Dietetic Association first recognized the need for delegating duties to non-professional personnel so that the qualified dietitian's time could more profitably be spent on duties for which she had been educated and trained. In that year, volunteer dietitians' aides were first mobilized as part of the over-all war effort, and the Community Nutrition Section sponsored a project concerned with preparing a training outline for such volunteers. Such a need was, to some extent, the result of the withdrawing of civilian dietitians into the armed services, thus creating a shortage of professional personnel. Expanded war needs also influenced the need for more dietitians in civilian areas.

However, with the advent of peace in 1945 and the demobilization of Army dietitians, the civilian need did not diminish; indeed, it increased as more employers in new fields realized and appreciated the services which dietitians are capable of rendering. Thus the employment opportunities for dietitians expanded and the well known "shortage of dietitians" increased almost simultaneously.

To meet the demands upon the profession, it soon became apparent that the fastest and surest way for dietetics to meet its responsibilities, particularly in the hospital field, would be for dietitians to concentrate their energies and time on the job in performing those tasks which other, non-professional people would be unqualified to do, at the same time relinquishing duties which demanded no specialized professional background. In effect, policy-making and over-all management functions thus became considered the hospital dietitians' prime responsibilities, and she was relieved of the day-to-day work of operating supervision, which was to be delegated to a non-professional person in the first line of supervisory employees. Along with this idea of delegating supervisory but not management functions came the proposal that clerical workers could also perform a useful function in a dietary department, and thus relieve the dietitian of more routine duties which she may formerly have performed.

Since 1947–48, when The American Dietetic Association first made a concerted effort to widen the use of the first-line supervisory person, the problem of implementing this recommendation has been given long and serious thought by leaders in the profession. Various names for such an employee have been proposed, and at present the title in use is "food service supervisor." The actual duties which should remain part of the dietitian's professional position, those which belong to the food service supervisor, and those of the clerical worker needed to be defined. In other words, actual job descriptions were needed to make this reorganization in the operation of a hospital dietary department feasible.

Dietitians have been given every encouragement in this revolution-from-within by hospital administrators, who are also acutely aware of the shortage of dietitians and the need for the most efficient use possible of the talents of the available qualified dietitians. Thus, as a matter of mutual self-interest as well as cooperation between professions, the Joint Committee of the American Hospital Association—The American Dietetic Association has shown much interest, especially in the following job descriptions or lists of "duties and responsibilities," which the Food Administration Section's Committee to Study Auxiliary Workers has compiled this year.

PROFESSIONALLY QUALIFIED DIETITIANS

The following job descriptions for professionally qualified dietitians incorporate the thinking of several project committees.

Director of Department

1. Is responsible for departmental planning, organization, and administration (including establishment of policies and standards for the department).
2. Has complete responsibility for the food service, including all phases of food production and service to patients and personnel.
3. Is an active participant in the development and execution of the educational program.
4. Maintains an active and effective staff development program.
5. Usually delegates responsibilities of certain units in the department to a staff dietitian (who is then responsible for smooth and efficient running of the unit).
6. Attends staff meetings called by the administrator.
7. Contacts administrative officials acquainting them with the needs, objectives, and accomplishments of the department.
8. Participates in the formulation and application of continuous and intensive orientation, training, and supervisory program for employees.

Administrative Assistant Dietitian

1. Is responsible for improving the nutritional status of personnel and patients through meals planned, prepared, and served according to the latest information available in foods, nutrition, and institution management.
2. Is responsible for establishing and maintaining sanitary standards throughout the department.
3. Raises and maintains the standards in quality of food produced and served, economic use of labor and food, the training of an efficient working force.
4. Contributes to the over-all departmental planning.
5. When an educational assistant is not assigned to the dietary staff, is responsible for all administrative

aspects of responsibilities listed below under "Educational Assistant."

Therapeutic Assistant

1. Is responsible for maintaining and improving the nutritional habits of patients through meals planned, served, and eaten according to the latest nutritional knowledge.
2. Interviews and instructs patients.
3. Pursues clinical research.
4. Cooperates in the care of patients by consulting with doctors, nurses, and social workers.
5. Is responsible for all therapeutic aspects of responsibilities listed below under "Educational Assistant," when an educational assistant is not assigned to the dietary staff.

Educational Assistant

1. Is responsible for using the best motivating and learning techniques in presenting nutrition and dietetics to student nurses, medical students, dietetic interns, graduate professional groups, and the public.
2. Is responsible for continuing study to keep knowledge up to date.
3. Formulates, directs, and participates in staff development and in-service training of dietetic employees.

All Dietitians, regardless of position

1. Supervise staff and other personnel who are responsible for continuing study to keep knowledge up to date.
2. Plan and direct all activities of the units for which they are responsible.

FOOD SERVICE SUPERVISOR

The over-all purpose of this position is: to perform supervisory functions which the dietitian may delegate; to relieve the dietitian of some administrative routine; and to allow the dietitian to concentrate on over-all administration of the dietary department. The following job description indicates the duties and responsibilities which may be delegated to the food service supervisor specifically assigned to the director of the department or to dietitians in charge of specific work areas.

1. Orients, trains, and supervises new employees.
2. Trains and supervises other employees.
3. Instructs employees in maintenance and care of equipment.
4. Makes employees' work and time schedules.
5. Supervises sanitation and housekeeping.
6. Supervises dishwashing unit.
7. Supervises activities of work areas including cafeterias and dining rooms.
8. Maintains standards of safety.
9. Takes refrigerator inventories
10. Prepares initial orders for food supplies and small equipment.
11. Checks and receives deliveries.
12. Maintains and improves standards of food preparation and service.
13. Supervises the use of and assists in the standardization of recipes.
14. Caters special functions.
15. Writes modified diets according to established patterns.
16. Supervises "diet kitchen," if any.
17. Supervises ward serving units or central tray service.
18. Contacts patients daily on routine diets and/or selective menus.
19. Prepares efficiency ratings of employees; reviews these first with the dietitian and then with the employee.
20. Takes part in dietary department conferences.

DIETARY CLERICAL WORKER

The purpose of this position is: "To assist the dietitian so that she can better focus her attention on the needs of the individual patient, serve top-quality food, and render efficient service." The following job description indicates the duties and responsibilities which may be delegated to the clerical worker specifically assigned to the director of the department or to dietitians in charge of specific work areas.

1. Performs general office routines.
2. Receives and transmits telephone messages.
3. Writes requests for repairs of equipment.
4. Types menus, schedules, requisitions, purchase orders, recipes, etc.
5. Cuts stencils, mimeographs or duplicates menus and forms.
6. Posts bulletin board memoranda.
7. Keeps time cards and/or attendance records.
8. Prepares payroll.
9. Keeps vacation records.
10. Prepares accident reports.
11. Places "routine" food orders, such as bread, milk, etc.
12. Keeps purchase records.
13. Checks invoices and prepares them for payment.
14. Maintains records necessary for cost accounting.
15. Calculates recipe and portion costs.
16. Takes physical inventories.
17. Keeps storeroom records.
18. Keeps perpetual inventories.
19. Requisitions supplies.
20. Records routine diet and menu changes.
21. Records census changes.
22. Tallies food summaries for cook's work sheet.
23. Checks issues on food cards against orders.
24. Checks laundry in and out.
25. Checks cash receipts if this is not done by business office.
26. Keeps cash records.
27. Relieves cashiers.
28. Prepares menu slips and tray cards.
29. Maintains nourishment records.
30. Checks storage and/or floor kitchens for supplies.

With the positions defined as above, the next logical step in the program of expanding the dietitians' area of effective service, despite the scarcity, is to promote the new occupation of "food service supervisor." It has been generally agreed that recruiting of this type of employee should be from the local community and, as a corollary, that training is a local responsibility. However, in the broader outlook, both recruiting and training are also responsibilities of the dietetic profession as a whole—at least in the matter of leadership. And our profession has accepted the challenge—both collectively as an organization and individually as members.

A year ago, in the July 1953 issue, the JOURNAL published a report of the training which is being carried in the state of Georgia, in Cleveland, in Denver, and in Minneapolis—all programs which have been inspired and sparked by the dietitians in those areas. In each case, the cooperation of community government has been elicited. In Georgia the Department of Public Health and the University of Georgia are co-sponsoring local institutes; in Cleveland, the city Hospital Council and Board of Education have joined hands; in Denver, the city's Emily Griffith Opportunity School and Denver General

Hospital are offering a combination theory-and-practice course; and in Minneapolis, the University of Minnesota is planning a training program for food service supervisors.

One logical place for such training to be offered is, of course, the local vocational school. With that in mind, a project committee of the Food Administration Section of The American Dietetic Association has this year prepared and just released in June a mimeographed "Tentative Trial Outline of Class Room Instruction for the Training of the Food Service Supervisor." (Copies of this twelve-page outline may be obtained from the A.D.A. Headquarters Office for 25 cents each.) It has been the thought of this committee that a course for the food service supervisor might be offered in two parts: 90 hr. of classroom work in a vocational high school, followed by a second semester (or other specific length of time) spent in actual supervised practice in a hospital. Further refinement of the outline is planned, as experience reveals more or different needs.

A second trial outline—this one for the recommended practical, supervised hospital experience—is also nearing completion. It will include suggestions for general orientation; experience in the main kitchen, including food preparation units, dishwashing, storeroom, cafeteria, and other areas of supervision; and patient food service, including the operation of the floor pantry. The work on this second outline is expected to be finished shortly, and will also be available for general distribution.

Food Lore From Nursery Rhymes

R. A. McCance has reported a bit of interesting research, which he published in *The Lancet* (December 20, 1952) and which we quote here in part, with the editors' permission.

The rhymes and jingles of our childhood are often uncertain in origin and difficult to date. It is perhaps for these reasons that many allusions in them to food customs, habits, likes, and dislikes have not yet found a place in scientific literature. Yet our nursery rhymes are not all so nonsensical as they may appear.

The common foods of a few centuries ago were not so different from those we eat today. Stews, sheep's head, haggis, roast beef, veal, giblet pie, leg of lamb, spinach, peas and beans, bread and cheese, curds and whey, pancakes—all are mentioned, some many times. The man in the moon wore a hat of "good cream cheese."

Fruits—cherries, apples, pears, and plums—are often mentioned. Oranges and lemons also must have been well enough known in the middle of the eighteenth century to be coupled with the bells of St. Clements, and, indeed "Oringes and Lemons" was the name of a seventeenth century dance.

Foods were often promised as treats and punishments for children. Most of the treats were sweet things, such as treacle, honey, tarts, cakes, plum buns, plum cakes, biscuits, comfits, and over and over again, sugar candy.

Handy spandy, Jack-a-Dandy,
Loves plum cakes and sugar candy.

Pie was clearly very popular. Blackbirds entered into the composition of a very famous pie, and piemen and piewomen sold their wares, often mutton pies, in the streets.

Simple Simon met a pieman,
Going to the fair.

The pudding was something quite different. It was a boiled concoction made in a bag tied with string. The basis was a cereal of some sort of peas. Puddings were eaten either hot or cold.

Pease-pudding hot,
Pease-pudding cold,
Pease-pudding in the pot
Nine days old.

Fuel was scarce, and one good fire probably had to be responsible for several days' food.

A supper of white bread and butter was something to sing for, and it was worth a journey to Banbury Cross to buy a penny white loaf.

Ride a cock-horse
To Banbury Cross,
To see what Tommy can buy;
A penny white loaf
A penny white cake
And a two-penny apple-pie.

The drinks people drank, the foods they ate, are in the nursery rhymes for all to read. If only we had the recipes and quantities, we might make a dietary survey of the beggars, the children, the old women, and even the man in the moon as they lived in the minds of our great and great-great grandparents when they were very young.

Current Comment

Treating Obesity in Children

JUNE MORRIS NORMAN

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When working with children, it is not uncommon to hear a parent exclaim, "Oh, I'm sure Mary will outgrow being a fatty." The example of the boy down the block or even herself is given as proof that it does happen. But, how many fat boys and girls do outgrow their obesity? If they are fortunate enough to do so, in the meantime, how many have acquired the nickname of "Fatso" or "Tubby"? This they must fight down, shy away from, or accept. The fat child presents a sad picture when seen in the pediatric clinic.

The role of the nutritionist as a member of the professional team in a pediatric out-patient clinic is an important and interesting one. The following report represents the results and evaluation of a nutritionist's work with obese children in such a clinic.

The material covered is a summary of the methods, observations, and progress made with these children over a period of one year. All the children had been referred by the pediatrician to the nutritionist with a diagnosis of simple obesity.

There are certain inconsistencies in the data presented. Some of the children included in this one-year observation were seen only twice, others were seen eight to twenty times, and a few had been seen one to two years before the observations were begun. In addition, the diets and methods of dietary instruction used were not stereotyped, but individualized.

During this year 78 obese children were referred to the nutritionist for weight reduction. However, only 37 returned to the clinic for follow up. It would be of value and interest to know why 41 children failed to keep return appointments. Perhaps they did not want to "diet," or their parents thought it was not necessary. There was a possibility that initial instructions were sufficient to stop a persistent weight gain or that the emotional problems were such that a weight loss was impossible. We can only speculate. In any event, by our follow-up method, we were seeing children who were in some way motivated to lose weight.

This report concerns the 37 children, ages six through thirteen years, followed during the year. Table 1 indicates the initial percentage of overweight based on the ideal weight of each child. The height-weight charts used were those prepared from data compiled by the Iowa Child Welfare Research Station (1).

The patients were divided into two groups, those who were 11 to 30 per cent overweight and those 31 to 65 per cent. The purpose of this artificial division was to see which group was more successful in reducing. It was felt that those who were only 10 per cent overweight were within normal limits. For this reason, two children were eliminated, leaving 35.

TABLE 1

Initial percentage of overweight of children

PERCENTAGE OF OVERWEIGHT	TOTAL	BOYS	GIRLS
Normal limits*	2	0	2
10–30%	15	4	11
31–65%	20	10	10
Total	37†	14	23

* 1–10% overweight.

† Two girls within normal limits were not included, leaving observation group of 35 children.

In seeing these children, an attempt was made not only to treat the obesity, but also to help them to maintain normal weight thereafter. This meant not only changing the food habits of the child, but also reeducating and changing the food habits of the whole family. All of the low caloric food plans were made with the nutritional requirements of growing boys and girls in mind. Each food plan was individually tailored to fit the child; printed dietary sheets were not used.

THE FOOD PLAN

The word "diet," with its unpleasant connotations of hunger, restriction, and so on, was taboo. We talked about the "food plan." For some, the food plan was a game, fun, a challenge, or was "more than I have been eating." For some, it meant punishment or deprivation, and this *usually* led to failure.

Each child was seen individually, either with or without the parents. When it was felt that the child was really interested in losing weight and was old enough to cooperate, the food plan was worked out with the child alone. This age was found to be around nine years. For the younger child, the food plan was discussed with the child in the presence of the parents. The emphasis was placed on variety, choice, and substitutions.

Flexibility was the keynote of the method used. What the child could have was emphasized rather than what he could not have. Substitutions, low caloric desserts, and "treats" were discussed at length. For example, there was no reason why a fourteen-year-old could not have a "treat" or dessert once a day. Calorically the maintenance requirements of such a child were so high that a weight loss was produced even when one "treat" a day was allowed. This treat was frequently a soft drink with the "gang" or a party food. It enabled him to remain a part of his group. Such a child seemed fairly satisfied with this one indulgence and often would voluntarily limit his "treats" to every other day or only on week-ends.

The child's success in losing weight depended on the interest of the parents and the acceptance of the need for the child to lose weight. Although the food plan for the older child was primarily planned and discussed with the child himself, it was essential to gain the parents' cooperation and confidence. In the presence of each child, general principles of weight reduction and food preparation were discussed with the parent or parents. It was important to talk with the person preparing the food in the household. With the younger child, success was more directly the parents' responsibility. They had to be well informed and willing to spend the time and effort involved in making substitutions and keeping the food plan interesting, so that the young child would be happy and a weight loss accomplished. Depending on his knowledge of foods, the older child could make a choice. It was then harder for the parent openly to sabotage the weight reduction.

Each food plan was calculated to meet the child's nutritional needs. In addition, the nutritionist used information gained from other members of the professional staff regarding the patient's personality and background in an attempt to approach the problem of weight loss in the most realistic manner. Using the extremes as examples, it meant that with some patients only brief and simple instructions were given to be supplemented or changed at future follow-up visits, while with other patients a rigid and precise regimen was written down in black and white.

It was often a matter of trial and error to determine who needed what kind of food plan and instruction. One young lad of ten asked to have his plan of meals written down. He had unsuccessfully tried to lose weight on a liberal verbal plan. Then again, there was overly conscientious Mother. The obese child in her family was more successful when the plan was very liberal. The mother was instructed in new cookery methods and normal child nutrition.

There were also mothers who used the diet as a whip and the nutritionist as a threat. One mother discouraged weight loss and implied that the only successful method was to cut the child's throat. The child lost no weight, and his efforts and those of the nutritionist were sabotaged. The mother finally discontinued bringing him to the clinic.

It was always a pleasure to help the child and parents when both were interested in weight reduction. A boy of twelve was a good example of this. He took pride in taking over the management of his diet. In his case, it was a simple matter of education regarding nutritional needs and cutting down on extra desserts.

RETURN VISITS

Each return visit meant that the nutritionist must be alert, must listen, and must evaluate the patient's progress. It was necessary not to feel that the patient's failure was her failure; otherwise this in turn affected the relationship with the patient. An attempt was made to try to understand what was happening with each patient. Why had Joyce gained weight and Jackie lost? Had the correct approach been used with sufficient flexibility, or were there too few directions and limitations? Was the approach and relationship with this child kept on a realistic basis? The answers to these questions were important in deciding the future course of action.

Failures do occur. However, some can be avoided. A child may be testing the nutritionist to see how she reacts and if she is "on his side." Being on his side does not mean condoning or ignoring a weight gain. It means dealing with the problem of obesity. Otherwise, the nutritionist has allowed herself to be put in a role by the child that may interfere with his successful weight reduction.

All patients were seen in follow-up visits either with or without the attending pediatrician. These return visits varied from weekly to monthly intervals. The patient was weighed at the return visit and progress evaluated. Depending on the original instruction to the patient, as mentioned above, the food plan might be changed completely, supplemented, or re-evaluated. Each child knew that we were trying to work out a food plan that would accomplish our purpose.

Discussion of weight progress at these return visits led to discussions of many other activities. The nutritionist was consulted on teen age etiquette and teen age fashions. Various other activities were reported, such as school, Cub Scouts, football, and and baseball. This enabled the nutritionist to know and understand her patients better, so that she could discuss more constructively each obesity problem. However, it also indicated to the nutritionist her own limitations and the need for assistance in dealing with these children. She became aware of the complexities involved in the problem of obesity and, therefore, sought the help of the pediatrician, psychiatrist, social worker, and nurse in evaluating and making future plans for the treatment of these children who needed to lose weight.

TABLE 2

Weight changes in children in one-year period

WEIGHT CHANGE	BOYS	GIRLS	TOTAL
Children Originally 11–30 Per Cent Overweight			
Loss			
1–5%	0	5	5
6–10%	1	1	2
11–15%	1	1	2
16–20%	0	0	0
Total	2	7	9
Gain			
1–5%	1	4	5
6–10%	0	0	0
11–15%	1	0	1
Total	2	4	6
Children Originally 31–65 Per Cent Overweight			
Loss			
1–5%	3	3	6
6–10%	2	2	4
11–15%	1	3	4
16–20%	1	0	1
20–25%	1	0	1
Total	8	8	16
Gain			
1–5%	1	2	3
6–10%	0	0	0
11–15%	0	0	0
Total	1	2	3

RESULTS

Table 2 indicates the percentages of weight loss or gain in each sub-group at the end of the year's observation. Because ideal weight in children is based on age, height, and growth, the percentage overweight may decrease even though there is a slight gain in actual weight. Percentage weight loss or gain was, therefore, based on ideal weight at the beginning and end of the period of observation.

Seventy-one per cent, or 25 of the children lost weight; 25 per cent (9 children) gained; and 1 child maintained his percentage of overweight during the year. Sixteen of the 25 who lost were in the group who were more than 30 per cent overweight.

The results of these particular isolated observations would seem to indicate greater success with the more grossly obese children. However, because the methods used were variable, no definite conclusion can be drawn regarding this result.

It is the hope of the author that this small study will stimulate interest in investigating further the hows and whys of this complex problem of obesity in children. It is the author's opinion that success with this group is possible when the combined efforts of the professional team in the pediatric out-patient clinic are pooled. Also, these results would seem to indicate that seeing each child as an individual leads to greater success. Certainly, by using this individual approach, the obesity problem in children becomes interesting and stimulating.

REFERENCE

(1) JACKSON, R. L., AND KELLY, H. G.: Growth charts for use in pediatric practice. J. Pediat. 27: 215, 1945.

COMMENT

THIS EXCELLENT paper presents a much needed positive approach to one of the most stubborn and discouraging of pediatric problems. The author has shown a fine sensitivity in dealing with these obese children. She treats the whole child rather than merely counting his calories. Her therapeutic tact is apparent in such subtle but crucially important maneuvers as emphasizing what the child *can* have rather than stressing what he must give up. Psychodynamic insights have shown that these children are already suffering extreme feelings of deprivation and are acutely sensitive to new threats of further deprivation.

Another example of her fruitful approach which should be underscored is her realization that the child needs to be able to obtain advice from his therapist on related subjects. All aspects of appearance, make-up, manner of dressing, and so on are inseparable parts of the child's image of himself. One of the major motivations for cooperation in trying to lose weight is dissatisfaction with the image the patient has of himself. This dissatisfaction is usually all-pervasive, and he needs advice, reassurance, and assistance in forming a new, integrated, pleasing image. This is often simply handled by practical, common-sense handling of the child's questions on these topics.

The author has apologized for "inconsistencies" in the data presented. By this she seems to refer to the fact that a severely "scientific" experimental design was not carried out. Instead, as she says, the handling of each child was, "not stereotyped but individualized." No apology need be made. Actually, her good results stem from this very lack of rigidity. It is more than likely that the usual resistance of obese children has been due to the misguided attempt to set rigid diets and force their acceptance.

The paper is valuable, too, because of the concrete way in which the author has set down many examples of exactly what she says and does with the child.

There was a significant difference in the response of the mildly obese as compared to the severely obese child. The author has merely reported the facts. It is likely that she has some speculations concerning the reasons for this difference. It is to be hoped that this work is to be continued and in subsequent publications her ideas on this matter will be included.—*Beatrice A. Hamburg, M.D., Chicago.*

* * * * *

I AM IN agreement with much of Dr. Hamburg's discussion. Individualizing the diet to fit the patient is not a new concept; however, the author's desire to establish a warm, dependable relationship with her patients is worthy of special attention.

The nutritionist must, of course, concern herself with the subject of food. She thereby runs the risk of representing to the child another over-protective mother figure. It *is* a risk in view of the type of mother-child conflict reported to exist in psychosomatic studies of obesity in children. These mothers often display anxiety over the health of their children and focus on offering food as a symbol of their love. The obese child, in turn, appears to have accepted an oversubmissive pattern as a way of living and shows less tendency to rebel against the maternal control. The anxiety generated in the child, both from the maternal relationship and from later ridicule of his obesity, increases the need for

overeating as an outlet for tension and as a source of emotional security. The increased size of the child gives him the illusory security of power. We would ordinarily anticipate marked resistance to any measures that lead toward reduction of weight.

The approach recommended by Mrs. Norman contributes toward helping the child achieve some self-reliance and independence, as noted in his opportunities for a "coke with the gang" and for choosing his food. This is an aid in counteracting the unhealthy relationship the child experiences with his mother around the subject of food.

The obese child is truly a psychosomatic problem. Mrs. Norman's ability to contribute toward the team approach is a good example of the fruitful area in which the nutritionist may function.

The key to weight reduction of the obese child, however, rests heavily on the mother's ability to permit her child truly to mature. The weight reduction may only be temporary where the mother relinquishes her need to direct the food intake during contact with the nutritionist, and reestablishes old patterns within a year or so. The need for continued contacts with both mother and child would seem warranted, and I hope Mrs. Norman will continue work on her interesting approach.—*Irwin M. Marcus, M.D., Director, Child Psychiatry Unit, Tulane University Medical School, New Orleans.*

• • • •

Communicating with People[1]

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Have you heard people talking about "letting the bridges down"? To those who work in the area of interpersonal relationships these words and symbols are becoming familiar. They were first used by a group of women as they talked about the way people get along together. One person noticed that when two people came together, it is as though each were half of a draw bridge, with a chasm between. As they begin to learn things about each other and to find things in common, the halves of the bridge are lowered, meeting to form a means of bridging the chasm. Then the two people can easily communicate their thoughts and get along together more readily.

People are gregarious. We all like companionship. We like to feel liked and wanted. We like the enhancement that comes from seeing ourselves reflected favorably by another person. We are not solitary figures by nature. Newspapers tell us that a Monday morning headline is never a problem, for in any city large enough to have a daily paper, at least one suicide occurs over every week-end. Investigation usually shows that the person had been alone for the entire week-end, this practice having become his way of living until he had lost all sense of being a part of the world. No one was interested in him, and he was not interested in anyone or anything.

We all need the personal enhancement that comes from finding favor with people. It is easier to talk with friends than with strangers, because we know what to expect from friends. Past contacts have resulted in the understanding that produces personal enhancement through developing an awareness of each other as likable individuals. Until such understandings are achieved, we remain defensively alert because we feel a need to protect ourselves. This takes energy and is tiring.

COMMUNICATING IN NON-VERBAL WAYS

In growing up we learned to know ourselves in terms of many ways of communicating with others. The way in which people move can communicate their feelings and is called body language. Facial expressions become a means of communicating. These are both non-verbal beans of communicating. Because we learn these before we learn words, we tend to rely on them as truer indications than words of what people think and feel.

Let us consider how people learn to communicate with each other. When we are born, the myelinization of our nervous systems is incomplete. Thus, we cannot see or hear clearly. Our main means of communication are the feeling sensations we have as we are handled. A tense person tends to be jerky in his motions. A relaxed person has a more rhythmic movement. An infant feels this. Jerky motions make the child fearful of being hurt or dropped, and he becomes tense. Rythmic motions soothe and relax him.

Food plays a very important part in the baby's orientation to the world. When people are hungry, their stomachs contract. This becomes painful and is why a baby cries when hungry. If he is fed, the pain is relaxed; if not, the pain continues. The child who is fed learns to tolerate some pain because he knows it will be removed. He learns to expect frustrations and satisfactions. The child who is not fed, learns that pain is with one no matter what he does. He learns to expect life to be unpleasant. These experiences help to form a child's expectation of life.

Attitudes thus formed become the basis on which future experience develops additional expectations of and attitudes toward life. Hospital studies show that babies who are handled fondly during feeding retain their food and develop more readily than do those who are left in their cribs when fed. The child who is fed by a tense person frequently regurgitates his food.

[1] Presented before the Alabama Dietetic Association in Montgomery, on April 24, 1953.

The tactual senses—first means of communication which the child develops—play an important part in all the child's early communications. The child becomes aware of body language very early. He learns that a person in a hurry walks so that his head arrives before his feet. Frightened people become rigid and try to make themselves as small as possible. Happy people become expansive. Excited people move "every which way" at once. Angry people draw back and level off their shoulders. Tense people jerk when they move. For the rest of the child's life, he will react basically in terms of what other people's body movements and body language tell him about their thoughts and feelings.

DEVELOPING ORAL COMMUNICATION

As children become aware of sound, loud noises frighten them and soothing tones relax them. The child unknowingly begins to correlate sounds with body language, and sounds come to mean to him the same as the body language used when the sounds are made. The child is delighted when he finds he, too, can make some of these sounds at his own will. Adults repeat and repeat familiar sounds to the child. Because he would rather have adult approval than anything else in the world, the child begins to mimic one sound, then words, and later, phrases to please the adult. When he is about two and a half, he begins to realize that certain sounds will bring certain results. It is then that he begins to develop word associations and word meanings. Most parents are loathe to recall the six weeks or so when the child learned to say no and said it to everything. As a child learns a new word, he must use it many times, just for the pleasure of using it and in order to become familiar with and accustomed to it.

Between four and eight, children learn to repeat sounds which are more complex words but whose meaning they do not understand. Listen to children mimic phrases or sentences which they hear in their own homes. They are trying to copy because they want to be like the grown-ups they love. In this copying, as in other copying, they develop habits of speech.

HABITS AS MEANS OF COMMUNICATION

Habits are ways of adjusting to situations and are formed by acting a certain way each time a given situation arises until the action becomes automatic. By the age of six, a child has developed habits of reacting which will cope with most of the situations he will meet in later life. That is why the pre-school years are so important. Habits can be changed and altered, but the longer a person has used a habit, the more difficult it becomes to change it.

Habit becomes a means of communicating, too. Let us consider what habits can communicate in terms of food. Each person has a different physiologic need to be met by the consumption of nourishment. Superimposed on this physiologic need is also the family pattern of eating. Most "big eaters" come from families of big eaters, while most "light eaters" come from families of light eaters. The foods people consider choice are determined largely by the eating habits in the area in which we grow up. Thus, the American uses milk while the Chinese does not.

But even more intimate is the association we have with eating. In some families, the table becomes the place where parents and children fight, the child refusing to eat and parents trying to force him. In other families, children learn that they are good only if they eat. But for most people, eating is a social occasion to be shared with people we like.

Dietitians, particularly, should be aware of the implications of eating habits as indications of how an individual adjusts to situations. In fact, they have become so indicative of a person's adjustment to life that in newspapers, one character's need of milk toast has become synonymous with a passive, dependent man.

The person who insists that everything on his tray be in the same position at each meal, and that each meal be served at an exact time is usually a person who will be positive that he is right, will be a meager eater who has not varied his diet or his way of living for years, and perhaps prefers nothing but fresh vegetables. The patient who barely nibbles and then only at someone's insistence, is usually wondering if life is worth the effort and cannot readily muster his energies to assume responsibility for a diet, or anything else. If the food is prepared and placed before him, and if he is urged, he may eat a little. He eats more only as he is helped to find something worth living for and thus for expending energy.

The opposite is the person who nibbles constantly. He is nervous, moves about a great deal, is always fearful but may not show this readily on the surface, and uses food as a means of reassuring himself that he will have enough reserve to meet any emergency. His fear of the potential emergency keeps his stomach contracted. Eating relieves this tension. Often the overweight person can reduce only as he is able to cope with the problems of everyday living more effectively, and thus feels less need for great resources to meet a potential emergency.

Most of us use the eating habits we establish as children. They are only slightly altered in later life, because the familiar is pleasant and it requires effort to change habits. When sudden changes occur in eating habits, it usually indicates a sudden change of personality and frequently the onset of mental or emotional illness.

THE MEANINGS OF WORDS

We do not begin to use words readily as a means of communicating until adolescence. Until a child is nine, he only understands about one word out of every ten that an adult says to him. Adults try to

be exact in the meaning of words and thus develop such complicated means of communicating that children do not understand. Rather, they rely on the tone in which the words are said. This is true for everyone when they hear words they do not know. Even as people gradually learn to use words, they learn them in different situations and thus the words have individualized connotations to each person.

We personalize words by making them cover not only their official meaning as stated in the dictionary but also what they mean to us in terms of our life experience. For instance, everyone at a meeting hears the same thing, but when they talk together about it later, each one will find that he experienced it differently. This is partially due to the listener's location in the audience, the way he feels about the people around him, his feeling about the kind of meeting, and what he is looking forward to after the meeting. Yet, when we talk with others, we generally assume that because we went through the same experience at the same time, we perceived it alike and that it meant the same thing to each of us and that we mean the same thing when we mention the name of the so-called common experience.

College professors tell us that even when they have done their best lecturing, the hearing and understanding of what was said is usually only about 75 per cent at best. In everyday conversations, we hear about half of what is said to us if we are familiar with the topic and know the people with whom we are talking. If it is an unfamiliar subject, we understand only about 10 percent.

These facts emphasize the need to know what words mean to the person who is hearing them as well as to the person using them. It is also important to recognize the people who never hear all that is said to them and that it is important to find out what they did hear. This is one reason why education has adopted the method of telling about a thing, showing how to do the thing, letting the student do it, and then telling again what has been done before the student is asked to tell what he knows about the field he is studying. Few of us in everyday living are willing to go to this effort. Being impatient, most of us wish to say a thing once and have it fully understood. Thus, being aware of the need to know what people hear when we talk with them and being willing to say it often enough so they will come to understand all that they need to hear is exceedingly important for anyone who works with people.

PROFESSIONAL RESPONSIBILITY

Communicating with people becomes paramount for professional people. Only as we can translate our technical knowledge so that it becomes meaningful to the person we are trying to help can that person use that knowledge effectively to help himself. The more upset or concerned a person is, the less he tends to comprehend words. He will rely first on body movements—the non-verbal forms of communication—and then on the tone of voice being used by the professional person. If non-verbal communication is reassuring, he begins to relax so that he can pay more attention to what is being said verbally. If the professional person has been observant of the troubles of an individual—body language, tone of voice, and habits of acting evident in an upset person—she can understand a little better what he really is concerned about and how he tends to use people to help himself.

The troubled person has words which mean special things to him. As he relaxes, by feeling that the professional person is interested in him as an individual, he feels freer to explain these special connotations of the words which he uses. The professional person must be flexible enough to translate what needs to be done technically into words which mean something to the patient. Then, the patient and the professional person have found a way of "letting down their bridges" to communicate and to work together for the patient's benefit. Only as the professional person does this can he successfully make his technical knowledge available to others so that they can use it to help themselves.

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Longevity of People with Diabetes

In the *News Bulletin of the International Diabetes Federation*, February, 1954, Dr. Elliott P. Joslin reported the most recent statistics acquired at the Joslin Clinic for 1950 through 1953. When compared with earlier tables, it is found that never before has the longevity of people with diabetes in this group, based on fatal cases, been as great.

AGE AT ONSET OF DIABETES	NUMBER OF PATIENTS	DURATION OF DIABETES
All	1358	16.3 yr.
0– 9 yr.	46	21.3 yr.
10–19 yr.	92	19.9 yr.
20–39 yr.	212	22.2 yr.
40–59 yr.	667	16.9 yr.
60 yr. and over	340	9.7 yr.
Unknown	1	—

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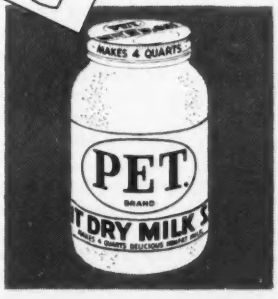

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Current Literature

Contributed by Mildred Bonnell and administrative dietetic interns. University of Washington, Seattle; Janette C. Carlsen and Ethel M. Miller, The Johns Hopkins Hospital, Baltimore; Mary L. Majerus, Dietetic Intern, Veterans Administration Center, Los Angeles; Elizabeth H. Tuft, Wesley Memorial Hospital, Chicago; and the Journal staff

THE AMERICAN JOURNAL OF MEDICINE

Vol. 16, April, 1954

* Metabolism of human heart. II. Studies on fat, ketone, and amino acid metabolism. R. J. Bing, A. Siegel, I. Ungar, and M. Gilbert.—p. 504.

Metabolism of the Human Heart. In previous studies it has been shown that glucose lactate and pyruvate did not use the total oxygen supplied the heart. This suggested that the heart also used noncarbohydrate substances to provide its energy. In this study, myocardial extraction of fatty acids, ketone bodies, and amino acids were measured. The ratio of fatty acids was particularly large after a high-fat intake, suggesting storage of fat in the heart muscle. Ketone bodies also appear to be utilized by the isolated heart muscle. There was no evidence of definite ratio between utilization of carbohydrate and acetone bodies, indicating that the oxidation of ketone is not dependent on carbohydrate oxidation. Amino acids were extracted in considerable quantity from coronary blood.

THE AMERICAN JOURNAL OF NURSING

Vol. 54, May, 1954

* How to read a blueprint. B. J. Small.—p. 586.

How to Read a Blueprint. This article explains the meanings of symbols and abbreviations commonly used in blueprints. The author feels it is important to know these because, at present, when a new hospital or health facility is being planned or when plans are made to remodel or expand existing ones, supervisors, head nurses, and others with administrative duties are asked for suggestions. If they can read the blueprint, they can visualize the finished building and are able to offer concrete suggestions.

ANNALS OF INTERNAL MEDICINE

Vol. 40, April, 1954

* Treatment of edema with cation exchange resins, including certain hormonal observations. L. H. T. Bernstein and J. M. Evans.—p. 698.
* Use and abuse of corticotropin (ACTH) and cortisone in allergic conditions. L. Unger and A. Unger.—p. 721.
* Coexistent acromegaly, diabetes mellitus and diabetes insipidus. R. P. Natelson.—p. 788.

ACTH and Cortisone in Allergic Conditions. Even prolonged use of ACTH and cortisone does not change the underlying allergic state. Allergic patients should receive a careful allergy survey, and then treatment based on the survey. However, these hormones should be administered promptly in the occasional case in which death seems imminent (severe asthma, angioneurotic edema, and exfoliative dermatitis, especially). The resulting improvement is usually dramatic and will tide the patient over the critical phase of his illness. ACTH and cortisone are also indicated for those asthmatic patients in whom careful therapy has failed. In a series of 50 patients, excellent results occurred in 16, improvement in 26, and failure in 8 cases. Relapse followed the discontinuance of the hormone in 50 per cent of the patients. Results are excellent in rhinitis, but the treatment is too potent for routine use. These hormones are also useful in alleviating symptoms so that accurate skin testing can be done. Serious untoward reactions can occur, especially those associated with edema, increased blood pressure, increased glycosuria, and reactivation of latent pulmonary tuberculosis and peptic ulcers. Psychoses have followed use of these hormones, and infections have been masked with serious results.

Cation Exchange Resins for Edema. Eleven ambulatory patients with edema of chronic cardiac decompensation were treated with cation exchange resins. Good diuresis occurred in eight patients and maintenance in better cardiac compensation with fewer mercurial injections was obtained. Sodium intake was moderate or high in all but two of the subjects; the amount of dietary sodium did not appear to determine the response to resin therapy. Careful observation of patients receiving these agents is essential to avoid the side reactions of acidosis, weakness, anorexia, nausea, vomiting, diarrhea, or constipation. It is postulated that cation exchange resins induce diuresis by preventing absorption of a relatively small fraction of sodium from the gastrointestinal tract, thus favorably influencing an individually determined critical level of sodium to be excreted by way of the kidney.

ARCHIVES OF INTERNAL MEDICINE

Vol. 93, February, 1954

Cardiovascular diseases: a review of some significant publications (July 1949-June 1952). R. S. Schaaf.—p. 254.

Vol. 93, March, 1954

Central nervous system involvement in disorders of collagen. B. I. Lewis, D. W. Sinton, and J. R. Knott.—p. 315.

Vol. 93, April, 1954

* Treatment of acute disseminated lupus erythematosus with corticotropin and cortisone. L. J. Soffer, S. K. Elster, and D. J. Hamerman.—p. 503.

ACTH and Cortisone in Lupus Erythematosus. Thirty-two patients with acute disseminated lupus erythematosus were treated with cortisone or corticotropin. Of these, 23 are living and reasonably well and 9 have died. During hormone-induced remission, the lupus cells were much reduced in number, but never disappeared. Hypertension present before institution of therapy, renal abnormalities, hepatomegaly, and splenomegaly persisted. The remaining clinical and laboratory manifestations of the disease improved to varying degrees. Almost all patients developed some evidence of hypercorticalism. Hypertension, edema, congestive heart failure, psychiatric abnormalities, convulsions, and alkalosis occurred with a greater degree of frequency in the patients who did not survive. The side-effects of hormonal therapy are generally reversible, when dosage is reduced or treatment discontinued.

BRITISH MEDICAL JOURNAL

No. 4866, April 10, 1954

* Treatment of pernicious anemia with very small quantities of pyloric mucosa and vitamin B_{12}. E. Meulengracht.—p. 838.

Treatment of Pernicious Anemia. It has been shown that even very small doses of dried pyloric mucosa from the pig's stomach exerts a delicate but slightly anti-anemic effect when given orally. With the same amount of pyloric mucosa given with vitamin B_{12} in quantities which in themselves are inactive, a strong anti-anemic effect is achieved.

CEREAL CHEMISTRY

Vol. 31, March, 1954

* The effect of spices on yeast fermentation. W. J. Wright, C. W. Bice, and J. M. Fogelberg.—p. 100.

Effect of Spices on Yeast Fermentation. Spices, at low levels, exhibited marked promoting effects on gas production in simple yeast-sugar suspensions as well as in more complex media. Yeast cell proliferation was not augmented by spices. In limited experiments with sweet doughs, spices promoted gas production in doughs made without shortening but not in those containing shortening. At higher levels studied, several spices—particularly cinnamon—retarded gas evolution in simple yeast-sugar systems. The gas-promoting effect of spices was counteracted by mustard flour which strongly inhibited yeast growth. Little or no accelerating activity was found with the essential oils and some, such as cinnamon, retarded gas production. The gas-promot-

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ing factor was still present in spices after ether extraction, autoclaving, ethylene oxide treatment, and prolonged boiling. The gas-promoting factor in ground spices is still unidentified except that it is relatively stable to heat, is not extracted by ether, and does not appear in the ash.

FOOD RESEARCH

Vol. 19, March–April, 1954

- Effects of light on the formation of carotenoids in tomato fruits. J. P. McCollum.—p. 182.
- Errors of the second kind in organoleptic difference testing. G. A. Baker, M. A. Amerine, and E. B. Roessler.—p. 206.
- The lead, zinc and copper content of foods. D. Larkin, M. Page, J. C. Bartlet, and R. A. Chapman.—p. 211.
- Amino acid composition of organ meats. B. S. Schweigert, B. A. Bennett, and B. T. Guthneck.—p. 219.

Role of Light in Forming Carotenoids in Tomatoes. A number of investigators have studied the effects of light on the carotenoids of the tomato. A recent study has shown that tomato fruits exposed to direct sunlight in the field often develop poor color due primarily to a low content of lycopene. At favorable temperatures (70° to 75°C.), the rate of carotenoid development is increased by illumination. Light is effective until chlorophyll disappears. Carotene is increased by illumination of tomato fruits during ripening. Also, if exposed to direct sunlight during development, the fruits will be higher in carotene when ripe than shaded fruits. It was reported that the chlorophyll of mature green tomatoes does not decompose. The carotenoids fail to develop in the absence of atmospheric oxygen unless fruits are illuminated. Oxygen is apparently supplied by photosynthesis, which—in view of the impervious skin of the tomato—may partially explain the effects of light on carotenoid development in a normal atmosphere.

Errors in Organoleptic Testing. An error of the first kind in difference testing by organoleptic methods is committed if it is said that a difference exists when in fact no difference is present. An error of the second kind is made when actual differences are overlooked. Present experimental methods control errors of the first kind satisfactorily but without proper attention to errors of the second kind, progress will be slow and its cost will be more than necessary to achieve desired results. A simple organoleptic experiment on the detection of sucrose in distilled water by means of paired tests is presented. At the present level of experimentation, it appears that the probability of making the right choice of a pair increases linearly with respect to the logarithm of the concentration, but that these linear relationships vary greatly for different tasters with somewhat similar training and background. The probabilities of errors of the second kind vary greatly from taster to taster and from group to group. A combination of tasters gives results that are much poorer than the best but somewhat better than the worst.

Lead, Zinc and Copper Contamination of Foods. In a classification of inorganic contaminants of foods on the basis of their effect on the human system, lead falls into the group which is harmful and non-essential, while copper and zinc are among those which are essential but harmful in excess. More important from the health viewpoint than the naturally-occurring inorganic elements is the possibility of deliberate addition. Lead may find its way into foods from insecticide sprays, food processing equipment, solder from tin cans, and other vehicles. The most important source of contamination of lead in fruits and vegetables is from spray residues. A total of 171 food samples were analyzed for their lead, copper, and zinc content. The results indicate that in general the lead, zinc, and copper content of the processed foods examined is satisfactory.

Amino Acids in Organ Meats. A study was made to determine the amounts of leucine, valine, isoleucine, threonine, phenylalanine, methionine, tryptophan, arginine, histidine, and lysine in liver, kidney, heart, brain, pancreas, lung, and spleen from beef, pork, and lamb, respectively. On an over-all basis, the amino acid composition was similar for all organs. Certain differences were observed, however. On evaluations based on the amino acid composition of the protein, liver was higher in leucine, valine, methionine, and possibly threonine than were other organs. Lung and spleen protein tended to be lower, compared with other organs, in several of the amino acids. The tryptophan content of the protein of pork pancreas was considerably higher than for the other organs. Further studies with enzyme preparations from pancreas (pancreatin and trypsin) showed that the protein of these samples also was high in tryptophan.

FOOD TECHNOLOGY

Vol. 8, May, 1954

- Effect of storage temperatures on the aging of country-style hams. S. R. Cecil and J. G. Woodroof.—p. 216.
- Carbohydrate changes during storage and cooking of sweet potatoes. W. A. Sistrunk, J. C. Miller and L. G. Jones.—p. 223.
- Flavor and color evaluation of canning crops grown on soil treated with insecticides. J. C. Hening, A. C. Davis, and W. B. Robinson.—p. 227.
- Effect of low freezer storage temperature and wrapping material on the quality of frozen meats. J. I. Simpson and I. C. L. Chang.—p. 246.

Storage Temperatures and Aging of Hams. The effects of storage temperatures on the rate of aging of country-style hams are described, as determined by measurement of typical physical, chemical, and sensory characteristics of aging. Aging was found to be a function of storage time at temperatures of 50°, 68°, and 86°F. but hams did not age properly at 33°, and at 0° there was no aging at all.

Carbohydrate Changes in Storing and Cooking Sweet Potatoes. The effect of original sugar content upon cooked sweet potatoes after storage is discussed. Starch-sugar changes were followed through the cooking process to determine the influence of various methods of precooking and cooking on total sugar content. Methods of evaluating the cooking properties of present varieties of sweet potatoes are described. Baking is shown to be the most important factor influencing the final quality of the sweet potato and is recommended as a performance factor to consider in sweet potato breeding.

Flavor and Color of Canning Crops from Insecticide-Treated Soil. The effect on vegetables grown on land treated with insecticides was investigated. In one season's (1952) tests, tasters were able in some instances to show a significant difference in flavor of puréed squash grown on untreated and insecticide-treated soils. However, in the tests of the other vegetables, the tasters were unable to detect significant differences in flavor. No characteristic off-flavor which could be definitely attributed to an insecticide was established. Some indication of color changes appeared to be related to the soil treatments.

Effect of Temperature and Wrapping Material on Quality of Frozen Meats. This study was designed to compare the keeping quality of hamburger, bacon, and sausage at the usual home-freezer temperature (0°F.) with samples stored at −20°, −30°, and −40°F. By lowering the freezer temperature, the development of rancidity was retarded, and these findings were confirmed by organoleptic tests. However, the hamburger did not show significant rancidity until it had been stored for more than half a year at 0°F. Aluminum foil and glassine-laminated paper both retarded the development of rancidity of each kind of meat at each storage temperature when compared with samples wrapped in polyethylene-coated paper and in butcher-wrap of good quality.

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

Vol. 2, March 31, 1954

- Food fads and fancies: a health problem. H. L. Sipple and C. G. King.—p. 352.
- Flavor studies: origin of chicken flavor. E. L. Pippen, A. A. Campbell, and I. V. Streeter.—p. 364.
- Antibiotics in food processing: experimental preservation of fish and beef with antibiotics. H. L. A. Tarr, J. W. Boyd, and H. M. Bissett.—p. 372.

Food Fads and Fancies. The existence and activities of food faddists are a constant menace to public health. These "modern medicine men" reach thousands of persons through the mass communications media such as radio and television, posing as "food experts" and using high pressure salesmanship to convince the public of the necessity for using their products. The danger lies in the fact that present educational measures are not enough to acquaint the public with the fact that these products will do them no good and that they may be harmful. Persons believing in the curative powers of these products will delay seeing a physician in time to prevent the spreading of a disease. Dealing effectively with nutritional quackery

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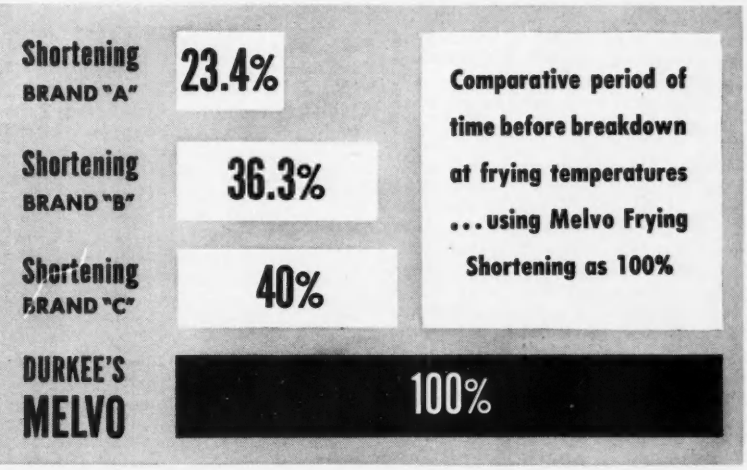

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is largely an educational problem. It requires the extra effort of focusing continuous attention on both elementary and adult education so that people can learn about proper dietary habits and not be taken in by food faddists.

Origin of Chicken Flavor. Poultry flavor was studied to increase knowledge of its chemical nature. Such information will provide a sound basis for measures that assure maximum retention and development of flavor, particularly in commercially produced poultry products where processing and storage conditions may affect flavor. Determination of the relative contribution of gross parts or fractions of the carcass to flavor of broth showed that fat contributes to the aroma of broth, but is otherwise of minor importance to its flavor. Meat was a better source of flavor than bones, skin, or a composite of all three. Precursors of flavor are readily extracted with cold water from cut-up raw meat. Conclusions concerning the practical implications of these laboratory results must await an extension of the study to include other variables that would be encountered under operating conditions.

Preservation of Fish and Beef with Antibiotics. The need for a simple, inexpensive method of reducing losses of flesh foods due to bacterial spoilage prompted an investigation of the value of antibiotics. Spoilage of whole, eviscerated fish was retarded markedly by ices containing 1 to 4 p.p.m. of chlorotetracycline (Aureomycin hydrochloride), by holding six days at −1°C. in sea water containing 2 p.p.m., or by 1-min. immersion in solutions containing 50 or 100 p.p.m. of the antibiotic prior to icing. The effect of different conditions on stability of chlorotetracycline in flesh foods was studied. These treatments have value in protecting fish from bacterial degradation. Owing to presence of interfering substances, it was not possible to detect, by the usual microbiologic assay, chlorotetracycline in flesh of fish so iced.

JOURNAL OF THE AMERICAN GERIATRICS SOCIETY

Vol. 2, March, 1954

* The relative merits of serum lipoprotein and cholesterol determinations in atherosclerosis. H. Engelberg.—p. 146.

Serum Lipoprotein and Cholesterol Determinations in Atherosclerosis. Currently available evidence bearing on the relative merits of serum lipoprotein and cholesterol determinations as indices of developing atherosclerosis is reviewed. It has been amply proved in animals and man that the total cholesterol level is often misleading. Certain lipoprotein classes are well correlated with the incidence of the disease in man. In several different experiments, these lipoproteins were correlated positively with atherosclerosis, whereas cholesterol was not. From earlier work, it follows that the determination of S_f 12–100 lipoproteins is better than the determination of cholesterol as an index of atherogenesis.

THE JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 207, March, 1954

* Studies on vitamin B_6. V. Chronological sequence of biochemical defects in the vitamin B_6-deprived rat. J. R. Beaton, J. L. Beare, G. H. Beaton, E. F. Caldwell, G. Ozawa, and E. W. McHenry.—p. 385.

Vol. 207, April, 1954

* Ascorbic acid synthesis in normal and drug-treated rats, studied with L-ascorbic-1-C^{14} acid. J. J. Burns, E. H. Mosbach, and S. Schulenberg.—p. 679.

* Metabolism of free amino acids in fasted and zein-fed rats. C. Wu.—p. 775.

Metabolism of cholesterol by intestinal bacteria *in vitro*. E. Wainfan, G. Henkin, S. C. Rittenberg, and W. Marx.—p. 843.

Vitamin B_6 Deficiency. The relation of the appearance of the metabolic disorders to time and to one another in the vitamin B_6-deficient rat was studied. Differences in carcass total crude fatty acids and tissue total vitamin B_6 levels were evident within one week of deprivation. Significant alterations in nitrogen metabolism were not evident until at least four weeks had elapsed. This study indicates that disturbances in nitrogen metabolism in the vitamin B_6-deficient rat may be secondary to a primary effect on energy production which deprives the animal of surplus food for storage as fat.

Ascorbic Acid Synthesis in Rats. L-ascorbic-C^{14} acid was administered to normal rats, Chloretone-treated rats, and pentobarbital-treated rats, and the specific activity of the urinary ascorbic acid was measured on successive days. The results indicated that the increased excretion of ascorbic acid after administering Chloretone and pentobarbital resulted from an acceleration of ascorbic acid biosynthesis. Urinary excretion accounted for only a fraction of the ascorbic acid synthesized each day: 15 per cent for the normal animals compared to 48 per cent for Chloretone-treated animals and 24 per cent for pentobarbital-treated animals. The rest of the ascorbic acid was in part degraded to carbon dioxide, and the remainder appeared as transformation products in the urine.

Metabolism of Free Amino Acids. Paper chromatography was employed for the determination of amino acids and related compounds in plasma, tissues, and urine of rats. Both fasting and the feeding of zein caused a general decrease in total α-amino nitrogen concomitant with a decrease in protein in plasma and tissues. The concentrations of alanine, glutamic acid, glutamine, glycine, serine, and threonine were appreciably decreased during a fast, while those of leucine-isoleucine, valine, and taurine were tremendously increased. Deficiency of lysine in the zein diet resulted in an exceedingly low content of lysine in plasma and muscle. Urinary excretion of free amino acids was greatly diminished during fasting. However, excretion of taurine was immensely increased. The feeding of zein caused the urinary excretion of extremely small amounts of free amino acids; at the same time, large quantities of amino acids were excreted in the bound form.

THE JOURNAL OF CLINICAL NUTRITION

Vol. 2, January–February, 1954

* A critical appraisal of the dietary management of peptic ulcer and ulcerative colitis. S. Wolf.—p. 1.

* Nutritional aspects of heart failure. C. R. Shuman and M. G. Wohl.—p. 5.

Current status of vitamin therapy in nervous and mental disease. R. A. Peterman and R. S. Goodhart.—p 11.

Nutritional studies of juvenile diabetics attending summer camp. H. G. Jacobi.—p. 22.

* Hemoglobin level and dietary intake of adults. L. Mirone.—p. 38.

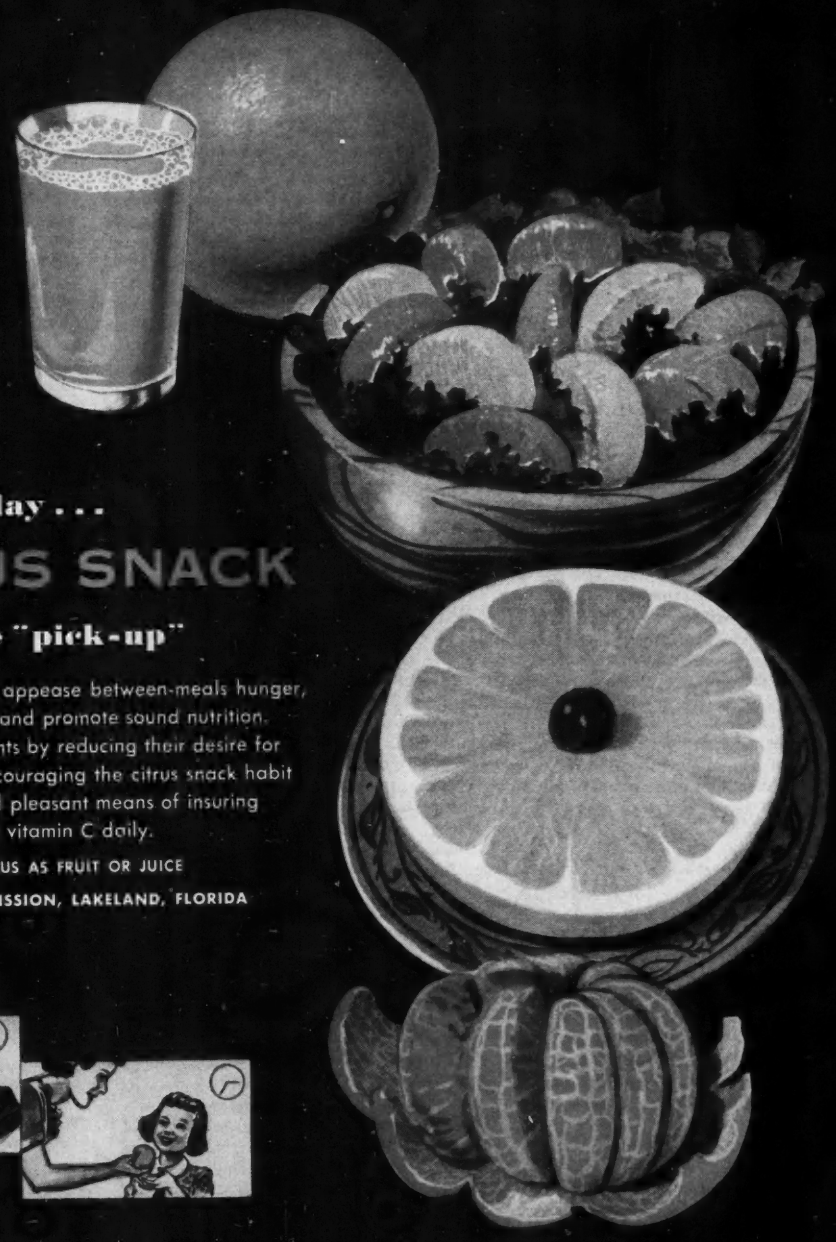
* Dietotherapy: diets restricted in fat. C. Robinson.—p. 47.

Dietary Management of Peptic Ulcer and Ulcerative Colitis. The beneficial effects of a high-fat meal on gastric acidity and motility can be nullified by situations of anxiety and tension, it is reported. The inhibitory effects of diet in peptic ulcer should not be counted upon very heavily when the stomach is under stimulation from stressful situations in the patient's daily life. Similarly, the colon in ulcerative colitis responds more violently to certain situational stimuli than to foods and fecal contents. It is believed that there is great need to study the true effects of certain so-called irritating foods, condiments, and chemicals on the stomach.

Nutritional Aspects of Heart Failure. The nutritional status of patients with congestive heart failure becomes increasingly important as cardiac decomposition advances. In the resistant phases of chronic heart failure, serious nutritional alterations occur. These include changes in electrolytes and water balance, hypoproteinemia, and subclinical thiamine deficiency. Suggestions are made for supplying a dietary program which includes an adequate protein intake, restriction of salt, and supplementation with oral or parenteral vitamin therapy.

Hemoglobin Level and Dietary Intake. A survey of the hemoglobin level of 535 "healthy" adults was made. No close relationship was found between overweight and underweight distribution and hemoglobin levels, thus indicating that underweight is not necessarily associated with low hemoglobin values. The caloric intake of this sample was not significantly different from the recommended allowance of the National Research Council. The author believes that the dangers associated with obesity and the provision for high nutritive diets of low caloric value are the factors to be stressed in nutrition education programs.

Diets Restricted in Fat. This article is concerned with qualitative and quantitative fat restriction as it is usually applied in the dietary treatment of diseases of the gallbladder. The fat-restricted diet should have the following characteristics: (a) nutrients provided at levels essential to maintain or restore normal nutrition; (b) fat restricted to a level compatible with adequate nutrition; (c) fats restricted to those which are highly emulsified and readily digested; and (d) foods bland in flavor and nondistending.



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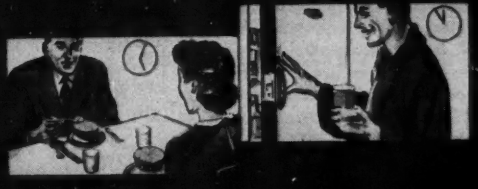

JOURNAL OF HOME ECONOMICS

Vol. 46, May, 1954

* The importance of nutrition. J. M. Hundley.—p. 307.

Importance of Nutrition. The author takes the view that overt nutritional deficiencies have been conquered in this country to such an extent that nutritionists can afford to divert some of their efforts toward important but less obvious nutrition problems. He discusses nutrition in relation to the growth and development of children, regulation of energy metabolism, prevention of disease, dental caries, and senescence. He believes that because of the existence of these problems, there can be no doubt that many and major opportunities exist for nutrition to contribute to better and more buoyant health in the future.

JOURNAL OF THE INDIAN MEDICAL ASSOCIATION

Vol. 23, March, 1954

* Vitamin A in acne vulgaris. K. D. Lahiri and F. J. Scandrett.—p. 247.

Vitamin A in Acne Vulgaris. The suggestion is made that acne vulgaris may be due to two factors: (a) the patient's endocrine status and (b) a defect in the normal utilization of vitamin A, and that these two factors may have some interrelationship with each other. Vitamin A therapy in oral doses of 100,000 I.U. daily, for a period of three months, cured 80 per cent of the patients with acne vulgaris; 20 per cent required further treatment for from four to six months. No evidence of toxicity was observed.

THE LANCET

No. 6813, March 27, 1954

* Hyperchloremia in diabetic coma. W. H. Taylor.—p. 639.

No. 6816, April 17, 1954

* Liquorice extract in Addison's disease. R. J. Calvert.—p. 805.

Hyperchloremia in Diabetic Coma. Hyperchloremia is described in ten cases of diabetic pre-coma or coma. This condition may result from intravenous infusion of solutions containing chloride in greater concentration than in extracellular fluids, from relative water deficiency, or from inability to excrete chloride ion. Inability to excrete chloride ion may arise from renal disease, from pre- or postrenal oliguria, or from a hyperchloremic-hypochloruric syndrome in which there is no histologic evidence of renal damage. The plasma-chloride level may be a useful guide to fluid therapy in diabetic coma, provided that when hyperchloremia develops, its several possible causes are appreciated.

Licorice in Addison's Disease. A case of Addison's disease which was well maintained for over a year on licorice extract alone is described. The optimal daily dose of licorice extract decreased from 60 to 3 gm. in just over eighteen months. In addition to this increased sensitivity to licorice extract, judged by the pressor response, a cumulative action was also evident. Licorice extract has a useful place in the long-term treatment of Addison's disease.

THE MILBANK MEMORIAL FUND QUARTERLY

Vol. 32, April, 1954

* Size of babies of obese mothers receiving nutrient supplements. D. G. Wiehl and W. T. Tompkins.—p. 125.

Size of Babies of Obese Mothers. A comparison of 235 obese patients (20 per cent or more above standard weight for height) with 467 patients less than 5 per cent above or below standard weight at the beginning of pregnancy showed: (a) a much larger percentage of obese patients delivered late and a smaller percentage delivered early than among patients of normal weight; and (b) babies of obese patients were, on the average, about 7 oz. heavier and nearly 1 cm. longer. Obese patients who supplemented their diets with vitamin capsules and a protein concentrate showed benefits as compared with obese mothers who had no nutrient supplement or took only vitamins or only proteins. There were differences with respect to several criteria: (a) a significantly larger percentage delivered within one week of the expected delivery time; (b) the average crown-sole length of babies was greater as a result of fewer premature deliveries; and (c) the birth weight relative to length and chest circumference indicated better development.

MILITARY SURGEON

Vol. 114, March, 1954

Human relations—as relating to programs of dietetics. G. Bulman.—p. 213.

THE NEW ENGLAND JOURNAL OF MEDICINE

Vol. 250, April 22, 1954

* Effects of phenylbutazone in gout. H. P. Johnson, E. P. Engleman, P. H. Forsham, M. A. Krupp, T. W. Green, and A. Goldfien.—p. 665.

Phenylbutazone in Gout. Phenylbutazone is clinically effective in the control of acute gouty arthritis. Toxicity was not apparent in short-term treatment but was frequent in long-term use. This drug seems to decrease the uric acid concentration in the serum while reducing the excretion of most of the urinary constituents, namely, creatinine, 17-hydroxycorticoids, 17-ketosteroids, sodium and potassium chlorides, and uric acid, as well as lowering the urinary volume. Phenylbutazone, despite its favorable therapeutic effects, should be carefully used.

NEW YORK STATE JOURNAL OF MEDICINE

Vol. 54, April 15, 1954

* The ballistocardiogram in diabetes mellitus. E. Donoso, L. Pordy, K. Chesky, and A. M. Master.—p. 1170.

Ballistocardiogram in Diabetes. It is well known that diabetes is associated with cardiovascular disease in a high percentage of cases. It has been maintained that cardiovascular disease is not a complication of diabetes but an integral component of the disease and may even precede its clinical discovery. Autopsies and clinical surveys attest to the extremely high incidence of vascular lesions in persons with diabetes, especially women. Ninety-one per cent of the seventy-six patients presented abnormal ballistocardiographic tracings. Forty-three suffered from uncomplicated diabetes. Their cardiac histories were negative, and they showed no evidence of cardiovascular abnormality on physical examination, by chest roentgenogram, and by fluoroscopy. The results of this ballistocardiogram conform to the known high clinical incidence of arteriosclerotic heart disease in diabetic patients, as well as with necropsy findings. The ballistocardiogram is a valuable instrument for the diagnosis of early cardiovascular abnormalities among diabetic patients, since ballistocardiographic changes appear even before electrocardiographic alterations occur.

NURSING OUTLOOK

Vol. 2, April, 1954

* The nutritionist in a voluntary public health agency. M. E. Vaughn.—p. 208.

Nutritionist in a Voluntary Agency. The nutritionist in a public health agency is responsible for helping the nurses to interpret sound nutritional information to the individuals and families in the community. Since the nutrition service of the Visiting Nurse Association of Detroit was organized in 1936, in-service education of the staff has been given priority over all other phases of the nutrition program. The nutritionist conducts classes for new staff members, sits in on conferences, makes home visits, and participates in the maternity health program, as well as performing other duties.

NUTRITION

Vol. 8, Spring, 1954

* Some nutritional aspects of thyroid disease. Q. J. G. Hobson.—p. 11.
* The effect of derationing on nutrition education. B. Nilson.—p. 23.

Nutritional Aspects of Thyroid Disease. There are two main aspects of thyroid disease which concern the dietitian. First, nutritional factors have long been known to be responsible for the development in some communities of thyroid enlargement (endemic goiter). This condition can be largely prevented by suitable correction of these nutritional deficiencies. The adult requires about 100 to 150 mcg. of iodine a day if deficiency is to be avoided. It is suggested that iodized salt be used. Second, the dietitian in hospital practice is especially concerned in the management of patients who have nutritional changes resulting from disorders of thyroid function. In hyperthyroidism, the dietary treatment is directed toward providing an adequate total caloric intake and repairing the patient's de-

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ficiency of protein, vitamins and minerals, especially calcium. The patient requires 3500 to 4000 calories a day, half from carbohydrates. Thiamine has also been found to be an important part of the diet.

Effect of Derationing on Nutrition Education. The effect of derationing on nutrition education in Great Britain is discussed. It is likely that derationing will bring a change of emphasis from recommending the foods to eat to prevent malnutrition to recommending those which will promote good health. Second, there is likely to be a change from teaching how to make the most of rations to how to choose the best foods for good nutrition and how to cook them to the best advantage. Third, derationing emphasizes the great need for studying the cost of good nutrition and for giving help to those whose circumstances make the goal of optimum nutrition difficult to reach.

NUTRITION ABSTRACTS AND REVIEWS

Vol. 24, January, 1954

* The diagnosis of malnutrition in man. A. M. Thomson and D. L. Duncan.—p. 1.

Diagnosis of Malnutrition. Naturally occurring "malnutrition" is seldom, if ever, the result of a single deficiency and may be regarded as the sum of several specific and separate deficiency states or as a general reaction to a multiplicity of causes. The review shows that it is in practice impossible to recognize any specific deficiency before the appearance of characteristic signs; early reactions that do appear are non-specific. Thus, a general concept of non-specific "malnutrition" is valid and useful and may be defined as those defects of growth, function, and structure which are produced by deficient diets of many kinds and which may be accompanied by some degree of underfeeding.

SCIENCE

Vol. 119, April 30, 1954

* Hemoglobin regeneration following oral administration of chelated iron. V. P. Seeberg, J. H Hidalgo, and W. Wilken.—p. 608.

Hemoglobin Regeneration after Administration of Chelated Iron. Published evidence suggests that heavy metals attached to a chelate nucleus are available to plants but not to animal organisms. It was found in this study that rats had a poor hemoglobin response to chelated iron received intravenously. Once introduced into the body parenterally as the heavy metal complex, the metal ions remained attached to the complexing nucleus and were not readily available to the body. These results in turn lend further support to the suspicion that, following oral administration, iron is released from the chelate by some mechanism in the gastrointestinal tract before being absorbed. This mechanism is presently under further study.

ADULT LEADERSHIP

Vol. 3, May 1954.

* Workshop on working with older people. What is the problem? C. Tibbitts and W. J. Cohen.—p. 12.
* How gray is gray? M. H. Little.—p. 14.

Problems of Older People. Modern civilization has produced a huge annual increment of middle-aged people with hours and years of time freed from responsibilities of making a living and from family tasks. However, many of these people are dissatisfied and 50 per cent report that they have time on their hands. The best adjustment occurs when people realize they are completing one phase of life and plunge eagerly into new forms of activity. Examples of people who have done this successfully are cited. It is suggested that instead of counseling people to relinquish and withdraw when aging begins, we should expect them to move forward into new spheres of personal growth. How this can be achieved is explained.

How Gray Is Gray? As people grow older in years, many of their basic needs remain the same, although they may be compelled by the circumstances of aging to change the ways in which they satisfy these needs. Six of the basic needs of older adults are summarized, and these have been chosen as the challenge for adult education. Pioneers in programing for older people give five important warnings from their experiences. It is thought that the need at present is not so much for special courses for older people, as for a determined effort by adult educators to bring present courses to the attention of older adults and to encourage many more of this large group to enroll and participate.

AMERICAN RESTAURANT MAGAZINE

Vol. 38, May 1954.

* There's money in tea leaves.—p. 128.

Profits from the Tea Hour. Afternoon tea, featured by a restaurant chain in New York City, has developed a volume over the years which amounts to the equivalent of 10 million cups a year. The tea service has become a minor tradition in the metropolis. Extra time and effort exerted to make the tea service an occasion for the guest has increased not only off-hour volume, but customers for regular meals. Special attention is given to the brewing of the tea itself. Pots are rinsed with boiling water, then boiling water is poured directly over a teabag of the right size to brew two cups of tea in a 10-oz. pot. The menu also offers "assorted tea sandwiches" and a list of twenty-six snack items to tie-in with the tea itself. The tea service has proved a successful means of introducing the regular food service to patrons who then return later for full-course meals. The special blend of tea is sold in take-home packages which, in addition to revenue and profit, provides a useful means of keeping the company's name before the public.

COLLEGE AND UNIVERSITY BUSINESS

Vol. 16. May 1954.

* Speaking of operations in dining hall and snack bar. H. Barton.—p. 50.

Dining Hall and Snack Bar Operation. There is, at present, interest on the part of administrator in placing operation of the dining hall and snack bar under professional food service management. This is recommended particularly if these auxiliary enterprises show a loss, just about break even, or provide a margin of profit too small to cover annual aspirin requirements. Some of the advantages are that higher prices need not cause undue concern when there is a contract with a caterer; the worries are his since the contract calls for a fixed charge per student per year. A food service also relieves the business office of a great amount of detail. A single check to the caterer replaces the innumerable checks each month to the butcher, baker, kitchen and dining staff.

FOOD ENGINEERING

Vol. 26, April, 1954

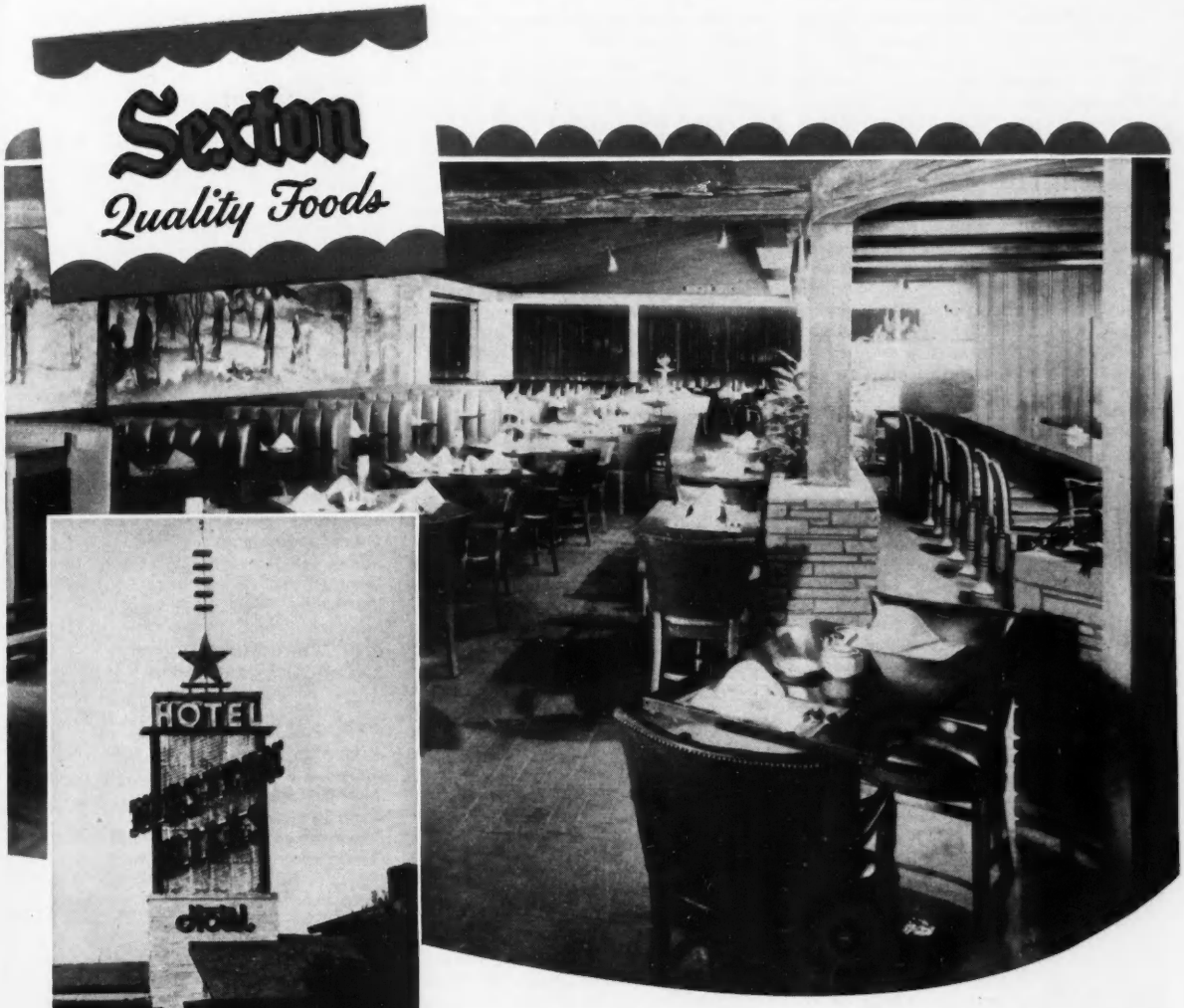
* Electron gun aimed at insects. V. H. Baker, O. Taboada, and D. E. Wiant.—p. 64.
* Color control is moving from lab to line. L. E. Slater.—p. 70.
* Planning and scheduling your maintenance work. G. J. Martin.—p. 76.
* Getting down to principles on the what and why of drink flavors. E. A. Morgan.—p. 82.

Vol. 26, May 1954.

* Gaging foods by psychometrics. D. Foster.—p. 57.
* X-rays show more than insects. M. J. Zunick and A. Pace.—p. 64.
* Potato peeling spurts. J. V. Ziemba.—p. 92.
* Sweet potato chips. W. A. Sistrunk and J C. Miller.—p. 129.

Irradiation for Insect Infestation. Studies at Michigan State College have shown that adult granary weevils and flour beetles can be exterminated by irradiation and that surprisingly low doses sterilize the eggs of these insects and prevent further reproduction by the adult. Tests of the irradiated grains showed them to be damaged for use as seed, although satisfactory loaves of bread can be made from them. Some differences in tenderness, flavor, and moistness in the experimental bread were noted by taste panelists, but some of the tasters actually preferred it. Other studies have shown that the effect of irradiation on vitamins is not appreciable. Tests are incomplete but promising.

Color Control. The Munsell color system, which defines graduations in color minutely, is one of the tools now available to food processors to control color in foods. With this system, classification of color can be quite precise. Instruments are also being developed to measure or match color. Progress in this field of color measurement will facilitate grading of foods, control of color of cooked foods, and gratification of customers' preferences.



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Scheduling Maintenance Work. A large number of companies are now using preventive maintenance, in part or as a complete program, for greater efficiency and lower costs. However, without good planning and scheduling, maintenance fails to achieve its purposes. This article lists five types of maintenance work which should be considered in scheduling: (a) routine work, such as lubrication, cleaning, and lamp replacement; (b) preventive inspections; (c) routine assigned work (tasks covered by work-order requests); (d) periodic equipment overhaul; and (e) emergency repair work. The types of jobs which fall into each category are detailed, as well as principles of wise scheduling and tips on "how to" schedule.

Drink Flavors. Flavor is a combination of many sensations. For fruit drinks, true fruit flavors give best results, but some can't be concentrated sufficiently and some require other stronger natural flavors or synthetics. For instance, the flavor of orange drinks is frequently enhanced by adding some lemon oil or lemon juice. Many flavor bases have vanilla added. Beverage flavors, to be acceptable for commercial products, must be water soluble or dispersable, and may be in the form of extracts, emulsions, concentrates, powders, and combinations of each. Most extracts are produced by dissolving flavor-bearing bodies in a solvent other than water. By federal standards, a flavor can be labeled "extract" only when the solvent is ethyl alcohol. With other solvents, bases must be labeled simply "flavors." Fruit and berry juice, widely used in flavor bases, are usually concentrated by removing the water under vacuum, and their flavor value depends on the degree of concentration, the type of fruit, and the method of concentration. Herb bases may be obtained through solvent extraction resulting in oleo resins. Most popular of these resins are ginger, black pepper, capsicum, paprika, celery, and vanilla. Artificial flavors, according to government standards, include flavors containing: (a) only synthetic chemicals as flavoring agents, (b) natural flavors plus synthetics native to the particular fruit or herb, and (c) natural flavor plus synthetics foreign to the flavor. A tabulation presents a "handy guide for choosing beverage flavors" and includes information as to the best type, best form, and recommended strength to be used, as well as additional pertinent "remarks."

Gaging Food by Psychometrics. Ways in which the psychologist is better prepared to assist the food manufacturer in product evaluation than an individual trained in any other discipline are explained. Some of the reasons rest with the fact that as a behavior specialist the psychologist's policy is never to test the product itself, but to study consumers' reactions. He is equipped to apply methods of known value and reliability without the need for a series of trial-and-error developmental procedures, interpret the responses he obtains, and then adjust his analytical methods in relation to the results. Examples of the indirect approach used by the psychologist and test cases are given. The instruments which assist him in precise control of physical and psychologic environment of his trained observers and of consumers are described.

X-Ray Spotters. X-ray has proved itself valuable to the food field in seeking out varied types of grain damage; in studying granularity, germination, density variations, and structural changes; and in grading seeds, such as cocoa and coffee beans and cottonseeds. The greatest benefit of the X-ray method over others has been in detection of internal infestation of grains. X-ray equipment used in the food field is described, and photographs of it are reproduced. Radiographs are also shown of the internal condition of various grains. It is felt that the radiograph method of testing should prove to be of great value also to importers of coffee and cocoa beans and to government officials responsible for inspection of such imported items.

Potato Peeling Spurts. Pre-peeling of potatoes for institutions and restaurants provides benefits for both the food processor and user. The processor carries out a profitable business of pre-peeling potatoes in one spot and on a large volume basis, employing specialized techniques and equipment. The user is spared the time and kitchen labor involved in tedious peelings. The eight-step process engineered by a firm in New York City is described, and photographs of it are shown. A rotary washer cleans the potatoes which are then conveyed to a non-stop, rotary peeler that is partially submerged in a 20 per cent lye solution. Rubber rolls and high-pressure water sprays remove loose peels and a 30-second dip in a 2 per cent citric acid solution removes excess lye and prevents discoloration. A crew of girls on a 50-ft. trimming line cut away dark spots and grade potatoes. A short dip in a 1.5 per cent sulphite bath prevents further chance of enzymatic discoloration. Leaving the slicer, French frying strips are again dipped in a sulphite bath on the way to a vibrating screen where they are chuted from screen separator to a dual bagging station.

Sweet Potato Chips. Quality chips can now be processed from sweet potatoes. To obtain top quality chips, sweet potatoes should be harvested before the onset of damaging low temperatures and cured for ten to fourteen days at 85°F. and 75 to 85 per cent relative humidity. To gelatinize the starch and alter the cell structure of the potato, preheating is necessary before peeling. Cottonseed oil was used as the frying fat. In all instances, an initial temperature of 300°F. and a finishing temperature of 270°F. gave best results. Chips fry to a bright orange or yellow-orange color. When they come out of the fat, they are flabby and tough; but as they air-dry and drain, excess fat on the surface is absorbed and they become crisp and flavor is as tempting as other hors d'oeuvre-type of appetizers. Any of the commercial paper bags suitable for conventional chips is satisfactory for packaging.

FORECAST FOR HOME ECONOMISTS

Vol. 70, May, 1954.

* Make the school lunch an adventure in learning. M. E. Prentice.—p. 14.

Learning through the School Lunch. The school lunch program provides a natural setting for children to learn and apply the essential facts of good nutrition. A wide variety of foods should be served so that children may come to know more foods, but at least one familiar food should be in evidence at each meal. Trained workers are needed to assist with food preparation as the need for scientific methods is generally recognized. By letting the children help to plan menus, they come to know the requirements of a balanced meal, foods that "go well" together, and interesting variety and color combinations. Meal planning also provides an excellent opportunity to learn about the foods grown in the community. Other learning situations which the school lunch program provides concern the business of producing and marketing foods.

FOUNTAIN LUNCHEONETTE AND DINER MAGAZINE

Vol. 1, May, 1954.

* Draw one!! What do you know about coffee?—p. 14.

Coffee Facts. Many facts about coffee of which the average person is unaware are presented. The bulk of the various varieties are grown in Latin American countries. As a rule, it takes five years after the seed is planted for the first full harvest of a coffee tree. Even then, a tree averages about 2000 "cherries," an amount only large enough to produce 1 lb. coffee. At least four processes are involved before the red coffee cherries are reduced to green beans. These include: removal of the outer skin; fermentation of the sticky pulp beneath it; removal of a parchment-like husk under the pulp; and the separation of the two sections of the bean from an innermost silver skin. The final stage and one of the most important is the brewing. Directions are given for brewing the "perfect" cup of coffee.

HOSPITAL MANAGEMENT

Vol. 77, May, 1954.

* How to prepare attractive, low cost menus. A. Wolfe.—p. 96.

Preparing Attractive, Low-Cost Menus. Since mealtime is often the bright spot of a patient's day, the food served should be as appetizing as possible. Many hints are given on ways to prepare food attractively, easily, and economically, beginning with the soup and following through to the main course. For modified diets, such as the bland, soft, and low-residue, the same basic foods used with the normal diets are employed with variations achieved by adding and subtracting certain things. Even with these diets, simple garnishes are suggested to make pleasing, attractive trays. Texture, flavor, color, and shape are all taken into consideration in

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planning the well-balanced meal. Suggestions are also given for preparing and serving new and exciting snacks out of the basic foods required for between-meal nourishments.

HOSPITALS

Vol. 28, May, 1954

* The answer to a dilemma—the shared dietitian. T. Pollen.—p. 108.

The Shared Dietitian. As some small hospitals do not require the full-time services of a dietitian, a trend to share the services of a trained dietitian is beginning. Information on the activities of such "shared" dietitians are reported. All of the administrators and several members of the boards of trustees interviewed expressed wholehearted enthusiasm for the plan. In most instances the shared dietitian makes a salary arrangement with the administrator of each hospital. Her establishment of high standards of food preparation and service and her firm control of all the areas of operation are of major importance to the hospitals. Areas of operation include: menu planning, food preparation with the use of standardized recipes, delegation of duties, purchasing, sanitation, patient and employee teaching, intradepartmental relations, and the definition of dietary department policies. This part-time method of operation has proved successful because the dietitian has built a dependable organization through the careful screening of workers and excellent employee training. Recently, in Illinois, a nonprofessional food service supervisor has been employed for each of the three dietary departments under the shared dietitian's management. After several months of intensive training, the supervisor is ready to assume responsibility for the smooth running of the department in the absence of the dietitian. Since the experience of the shared dietitian has been pleasantly challenging, it is possible that some of those who have worked for a number of years in a single institution may welcome the change to a new way of life.

HOTEL MANAGEMENT

Vol. 65, April, 1954

Good food is good sales promotion. W. O. Voegele. —p. 40.

* Vinyl flooring—how to install and maintain it. H. Lane.—p. 64.

Vinyl Flooring. Although vinyl plastic flooring is still too new for all information resulting from use over long periods to be known, it promises many interesting and worthwhile possibilities. Vinyl flooring is produced in both rolls and tiles—the latter being more popular. One outstanding feature is that vinyl flooring requires only a minimum amount of care. A 100 per cent vinyl floor will resist oils, greases, ordinary mineral solvents, alkalis, and acids. Thus, it seems exceptionally well suited for use in coffee shops, kitchens, or grills. One disadvantage, however, is its relative higher price.

THE HOTEL MONTHLY

Vol. 62, May 1954.

* How about your staff uniforms—will they pass a 4-way inspection?—p. 51.

Uniforms. Since the uniformed staff is the front-line public relations contact, they should be dressed accordingly. Four inspection points are given which include: (a) Does your uniformed staff include everyone whose work logically calls for a uniform? (b) Do your uniforms properly reflect the type of house you operate? (c) Are the uniforms well-fitting and made from modern, colorful materials? (d) Are your uniforms made so that cleaning and maintenance costs are kept at a minimum? If the answers are "yes," the uniforms are not only attractive to customers, but also comfortable for the employees.

INSTITUTIONS MAGAZINE

Vol. 34, May, 1954

* What goes into good managing? Here's one answer. A. M. Macfarlane.—p. 22.
* Efficient methods remove drudgery aspects of work. J. W. Barnes.—p. 47.
* Follow these guide posts. M. K. Cranmore.—p. 54.
* Flour, dessert developments aid low cost menu planning. D. E. Lundberg.—p. 60.
* Enforcement plus education.—p. 62.

Daylighting and ventilation.—p. 99.

* How to select sanitizing equipment. J. R. Myers. —p. 126.
* Batting average of supervisors built by 'extras.' C. H. Broaded.—p. 130.
* Improve your own morale: keep staff working happily. J. W. Stokes.—p. 134
* Methods, equipment to conquer complexity. —p. 138.
* Feeding children away from home.—p. 158.
* Incentives for good work found in other places than pay envelopes.—p. 199.

Maintaining and Improving Standards. This article continues the discussion of the principles of good management as applied to the food service of a Canadian retail store. Production on the premises of most of the items featured on the menu assures good quality food. Whenever possible, food production for the different food units should be centralized. Tasting is a very important part of the preparation and should be done before and during the service period. To assure the dependability of all items offered, it is recommended that the test kitchen play an important role, and its objectives are listed. Through the work of the test kitchen, the customers find pleasing and new innovations on the menu. Some of the unusual and flavorsome combinations are given.

Efficiency Removes Drudgery. Institutional workers who apply the principles of time and motion economy while doing their tasks will find less time and energy are needed to be more efficient. The basic principles of time and motion economy and how to use them are given. The importance of working heights and the need for rest periods are stressed, as the muscles and nerves cannot function as well when the worker is tired. The original method of cleaning a door and a new, improved method are illustrated and described.

Standardizing Recipes. The main guide posts of standardization of recipes are stated as follows: avoid inconsistencies; observe the principles of food preparation; apply the rules for balancing formulas; be cautious in enlarging small recipes; and guard that "coveted flavor." These principles are discussed in detail, and many suggestions are given for following them. Ten reasons for poor acceptance of an item are listed, over half of which are controllable. A chart of equivalent substitutions and balancing proportions is shown.

New Products Aid Low-Cost Menu Planning. Vegetable fat frozen dessert, which has most of the characteristics of ice cream, can be used by institutions at a 33⅓ per cent reduction in cost as compared with ice cream, and it tastes almost the same. The formula for making 2 gal. is given . . . High-protein flours make bread that provides a protein comparable to meat at a fraction of the cost, and research indicates that the addition of lysine greatly improves the nutritional efficiency of the protein in all normal wheat flours. The nation's bakers, however, have tended to consider such flours as suited only for specialty items and such specialty breads have not received continuous, wide acceptance by the consuming public.

Sanitation Enforcement Plus Education. Although both are important, it is the educational phase of the program that has raised sanitation standards in Seattle to a level impossible with enforcement alone. The Department of Public Health demands that any person seeking employment in the food industry attend a special sanitation course, and refresher courses are required every three years for workers who want to renew their permits. In addition, each food service establishment is required to send a supervisor, or the owner, to attend the course each year. Classroom instruction is conducted in such a way as to elicit maximum participation. Basic information on mimeographed sheets is distributed to students to supplement oral instruction. An important innovation was the addition of recommendations by work area for improvements beyond the minimum required by the health code.

Selecting Sanitizing Equipment. An immersion dishwasher is the solution for many smaller institutions whose volume does not require the large automatic types. There are two- and three-sink types of newer immersion dishwashers which speed up dishwashing, do a far better sanitizing job than their predecessors, and save time, detergent, and labor. The big secret of successful dishwashing with immersion-type equipment is in being able to supply sufficient quantities of 180°F. rinse water. Many modern immersion units have built-in heating equipment. Some of the general rules for good immersion dishwashing are given, as are rules on how to select the right type of machine.

Improvement in Supervisors. The supervisor who is able to improve his supervisory techniques by even a comparatively small margin may find the way is opened to faster promotions, in-

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creased job security, and greater prestige. By correctly solving problems, he will discover one of his best opportunities to excel. One of the simplest and easiest procedures for solving problems quickly consists of getting another person to eliminate the mistakes you would make solving the problem by yourself. The value of working with another person is that it gives you a chance to check the validity of your information and get a cross-check so that only the data that are both correct and pertinent to the problem are used.

Incentive Plan. A well designed incentive plan offers effective aid to the food service manager in welding his organization into a smoothly-functioning team. It points up practical answers to the question: "How can we get workers to want to do their best at all times?" However, in designing the plan, certain principles should be kept in mind if it is to function effectively. It should be "tailored" to meet the needs of a particular food service, and the conditions on which it is based must to some extent be controllable by the employees concerned. The plan should be simple enough to be readily understood, and rewards should be paid often enough to maintain interest. These rewards should be related to profits rather than to volume. An incentive plan answers the employee who seeks a wage increase by giving him an opportunity to augment his earnings through his own efforts.

Food Service Layout. The two general types of food service facilities in hospitals, centralized and decentralized, are described and the advantages and disadvantages of both discussed. A combination of the two is thought to be effective when one building or wing in which the kitchen is located is suitable for central service and the other buildings are so arranged that decentralized service is necessary. A dining room or cafeteria service for ambulatory patients is often advisable, as it eliminates the need for added employees, space, and equipment and is advantageous from the standpoint of operating cost. Photographs are shown of modern equipment which helps to make food service more efficient and easier for the workers. A diagram is also shown of proper tray assembly.

Feeding Children away from Home. Since children are just as fussy about what they eat away from home as adults, care should be taken with camp menus to make them attractive and taste-tempting as well as wholesome and well balanced. Although meals should be similar to home menus, they should also be nutritionally adequate and a list of foods that children need every day is given. Quantity is a large factor in camp feeding, for the children seem to develop tremendous appetites while engaged in camp activities. Menu planning is best done on a three-week basis as neither the children nor staff are apt to recognize the repetition if a three-week interval elapses. Local food supplies, labor, and equipment available usually govern the selection of menu items. Short cuts for the kitchen and dining room staff are suggested, together with a typical week's menu which contains ideas proved popular with young patrons.

Incentives for Good Work. It is thought that additional financial compensation in itself is not necessarily enough to provide proper incentives, for the stimulating effect of an increase in salary may tend to wear off if the job remains the same in all other respects. Ten techniques of non-financial incentives which are particularly adaptable to small establishments are listed. Most are the kind which can be used by work supervisors. They include weekly staff conferences which embrace all levels of employees, talks between supervisors and employees, and special privileges for certain employees and follow-up of employee placement so that workers feel that the management has a special interest in them. Also included are: giving employees sufficient work so they do not become bored; a suggestion plan; development of in-group spirit; encouraging competition; and providing an attractive work place equipped with good tools.

THE MODERN HOSPITAL

Vol. 82, May, 1954.

* Efficiency moves in on the cafeteria tray conveyor. L. E. Richwagen.—p. 108
* Ice containers for milk mixes. L. Nelson.—p. 112.

Conveyor for Cafeteria Trays. The conveyor belt is being used successfully in the cafeteria of Mary Fletcher Hospital, Burlington, Vermont, to bring about efficiency and cut down confusion. The conveyor is 28 ft. long and can accommodate twenty trays at a time. Each diner in the cafeteria is expected to remove his soiled dishes on a tray and place it on the conveyor belt. This eliminates the need for bus boys, and the tables are always ready for new diners. Trays and dishes are removed inconspicuously to a soundproofed clean-up area with none of the clatter and confusion of workers trying to get trays and dishes away from the entrance to the clean-up room. Workers in the clean-up room have a steadier flow of trays and a back-up margin which is the length of the conveyor belt. Although the advantages of the conveyor belt are many, as yet no disadvantages have been found.

Ice Containers for Milk Mixes. An aluminum ice container has been designed which keeps milk formulas for ulcer patients chilled without the usual melting of ice and resulting spillage. This container has several advantages over the conventional quart size vacuum container or "flower pot" arrangement as it is easier to clean and sterilize, is considerably less expensive, and is much more convenient in use. Condensation is at a minimum in these new containers as the space around the milk bottle seems to create a vacuum that pulls cold temperature toward the center, keeping the mix at an even temperature. The unit has been accepted enthusiastically by nurses who agree that it is a great improvement.

PERSONNEL JOURNAL

Vol. 33, May, 1954.

* Getting back into focus on performance ratings. W. G. Waggoner.—p. 17.
* Give your training program a chance. G. S. Odiorne.—p. 19.

Performance Ratings. A rating plan is defined as a simple and direct communication between the supervisor and employee which results in better living, working, and producing together. The rating plan which is described offers an opportunity for the supervisor to meet and talk with the employee about his efforts, ambitions, and plans. Instead of merely filling out a form, this rating plan gives the supervisor the opportunity to document on the back of the sheet the accomplishments of the employee. This then goes into the employee's personnel folder. Although in the past the emphasis on using performance ratings has been to encourage, guide, and give recognition, one of the most critical requirements to make it effective is that it must be fair. If an employee has repeatedly shown himself incapable of accepting guidance and help, this, too, should show up on the performance rating and the employee should not be "carried" along indefinitely.

Training Programs. Training programs which are put on with too little preliminary study of who needs training, what kind of training, and by what methods are criticized. Examples are cited of cases where training programs are given to men with as much as fifteen years' experience. It is advocated that management study the needs of employees before attempting to plan a training program; then a program can be planned which is appropriate and suits the level of the group. If the manager attends the meetings of the training program, it is suggested that he refrain from speaking until the group has had a chance to discuss their views on the subject.

PRACTICAL HOME ECONOMICS

Vol. 32, May, 1954.

* Modern food processing. H. Sherman.—p. 16.
* Freezer management. O. M. Thomas.—p. 24.

Modern Food Processing. Some of the notable advances made in the fields of dehydration, freezing, and canning are examined and discussed, such as the development of high-vacuum techniques and lyophilization which improve the quality of dehydrated foods; the most recent technologic developments in the food freezing field, dehydro-freezing and the recovery of volatile oils during concentration; and the three innovations in canning processes, "flash" sterilization, aseptic canning and sealing, and agitated cooking. The preservation of food by the addition of chemicals is discussed, as are the utilization of high-frequency sound waves and beta and gamma rays in food processing. Algae are mentioned as one of the new types of food which we may be using soon.

Freezer Management. Uses of the freezer are numerous and vary with each family. However, proper packaging, labeling, and placement of food are

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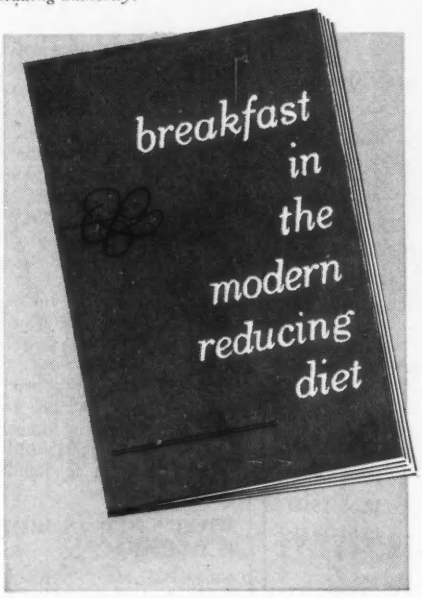

It is estimated that twenty-five million people in the United States are overweight. The leaders in the medical profession and in the public health field consider this a serious health problem and are engaged in a corrective educational program.

Included in this program is new recognition of the importance of the morning meal in reducing diets. Recent scientific studies have demonstrated that a good breakfast is the key to any successful reducing diet. Yet over the past years faddist and "high-fashion" reducing diets have contributed to the neglect of breakfast, which science now reports was harmful.

As a contribution to the nation-wide weight control program, the Cereal Institute has prepared a booklet titled, "Breakfast in the Modern Reducing Diet." It is available to you free on your letter of request. If you would like 25 free copies for your own use and distribution please so state in your letter and we will send them immediately.

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important to the successful management of all freezers. Another aspect of freezer management is planning ahead so that it will not be crowded with one food when its use is wanted for another. The home freezer must be defrosted twice a year, but the food will keep when removed if it is kept insulated from the warm room air by putting it in the refrigerator or covering it with blankets. Cost of operating a freezer depends on a number of factors, including the initial price and maintenance expense.

RESTAURANT MANAGEMENT

Vol. 74, May, 1954.

* Saving time and money with pre-fabricated meat and fish cuts. M. Batey.—p. 56.
* Modernizing a bakeshop for three-man operation rather than four. A. W. Dana.—p. 58.
* Analyzing your overhead costs. 5. Utility, repair and administrative costs. C. V. Kane.—p. 60.

Prefabricated Meat and Fish. The modern trend toward buying prefabricated meat, poultry, and fish is a money-saver in at least six ways. Since every portion is exactly the same, you know exactly what each serving weighs as purchased or how many servings each purchase will yield. With such exact specifications, over-production is cut, and there is less unused meat in the refrigerator to lose weight and flavor. Operating and labor costs are also cut, because prefabricated and preportioned meat requires less than 30 per cent of the refrigerator space needed for carcasses or primal cuts. This reduces operating expenses in storage as well as cutting and handling costs. Examples are given of twenty preportioned cuts and the various sizes and grades.

Modernizing a Bakeshop to Reduce Labor. Better planning, more equipment, and improved work scheduling brought smoother production with a three-man crew rather than four. Sanitary conditions were improved by the replacement of wooden fixtures and equipment by metal which also were easier to keep clean. Bags of flour and sugar, previously stored on the floor, were placed on a pipe platform which kept them dry and permitted mopping underneath. Shelving was provided for clean pans and pans of baked goods. A freezer now keeps baked products for future use which eliminates the extra staff required for day-off relief periods, permits the accumulation of adequate supplies during ebb periods, and acts as a cushion against short-term illness of an employee. By rearranging some of the equipment, many steps were saved and more work space was gained. Sketches are shown of the old and new layouts of the bakery.

Analyzing Overhead Costs. A table is given which shows the percentages of food sales absorbed by utilities, repairs, and administrative costs for four restaurants. The cost of these items is analyzed, and it is concluded that they could be cut if the restaurateur would devote more time to administrative duties. The utilities bill is often higher than necessary because he does not understand the fundamentals of economical power usage. Maintenance expense is frequently high because of his failure to survey and inventory furniture and equipment to see if it needs replacement instead of repairs; it is false economy to make expensive repairs on outdated equipment that might be replaced with better facilities at little additional cost. Administrative functions are often least respected by restaurant operators. It is suggested that if an operator himself is not a good business man, he should retain professional services to handle this aspect of his operation.

WHAT'S NEW IN HOME ECONOMICS

Vol. 18, May, 1954.

* Proper food storage . . . important to food protection. L. R. Carroll.—p. 28.

Proper Food Storage. To keep foods at their flavor best requires an understanding of factors which affect keeping quality or cause deterioration. The many modern storage containers and wrapping materials aid in retaining good food quality. However, understanding the general causes of deterioration makes it possible to store foods under conditions most favorable to good keeping quality, and an understanding of the things which contribute to holding foods at their flavorful best serves the homemaker in good stead in many ways. A chart is given for storage and care of foods under normal circumstances. Also listed are some of the wrapping materials and containers available.

HOTEL RESERVATIONS
Philadelphia

▶*37th Annual Meeting—October 26–29, 1954*

Please make your hotel reservations for the 37th Annual Meeting of The American Dietetic Association through: THE CONVENTION & VISITORS BUREAU, 17th & Sansom Sts., Philadelphia 3, Pennsylvania. The Bureau will accept either the form given below, or a letter containing equally specific information. You will receive confirmation of your reservation.

The Philadelphia Commercial Museum, where daytime meetings and exhibits will be held, is approximately two miles from the hotel area. The hotels listed below are located within a few blocks of The Benjamin Franklin Hotel, the headquarters hotel.

Order of Choice		Single	Double	Twin Beds
_____	Adelphia	$6.50–7.00	$10.50–12.00	$10.50–12.50
_____	John Bartram	6.00	9.00	12.00
_____	Benjamin Franklin	6.00–9.00	9.00–12.00	13.00–15.00
_____	Sylvania	7.50	—	10.50–12.50

☐ With single bed (very scarce; arrange for double occupancy, if possible)

☐ With double bed (for two persons)

☐ With twin beds

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CITY & STATE.....

ARRIVAL DATE..... DEPARTURE DATE.....

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(Name of person who will share your accommodations)

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News Notes

A.D.A. Officers for 1954–55. The following will be the elected officers of The American Dietetic Association for the coming year:

PRESIDENT—Fern W. Gleiser, Professor of Institution Economics and Management, School of Business, University of Chicago

PRESIDENT-ELECT—Winifred Howard Erickson, Director of Dietetics, Ancker Hospital, St. Paul

SPEAKER OF THE HOUSE OF DELEGATES—Mary Reeves, Regional Nutrition Consultant, U.S. Department of Health, Education, and Welfare, Chicago

SPEAKER-ELECT OF THE HOUSE OF DELEGATES—Marguerite L. Pettee, Nutritionist, University of Colorado Medical School, Denver

TREASURER—Doris T. Odle, Chief Dietitian, University of Colorado Department of Medicine (Colorado General Hospital), Denver

SECRETARY—Mary Ellen Johnson, Educational Director for Dietetic Internship, Colorado State Hospital, Pueblo

DELEGATES-AT-LARGE

- Maniza Moore, VA Area Medical Office, Atlanta—1955
- Lillian Storms Coover, Ph.D., Nutrition Consultant, Gerber Products Co., Ames, Iowa—1955
- Mildred Bonnell, University of Washington, Seattle—1956
- Margaret A. Ohlson, Ph.D., Michigan State College, East Lansing—1956
- Ercel S. Eppright, Ph.D., Iowa State College, Ames—1957
- Helen A. Hunscher, Ph.D., Western Reserve University, Cleveland—1957

NOMINATING COMMITTEE

- *Geographic Area I*—Louise Hatch, Massachusetts General Hospital, Boston
- *Geographic Area II*—Anna M. Tracy, Florida State University, Tallahassee
- *Geographic Area III*—Louise Irwin, Indiana University Medical Center, Indianapolis
- *Geographic Area IV*—Virginia R. Toews, Bethel College, North Newton, Kansas
- *Geographic Area V*—June Pettibone, The Mason Clinic, Seattle

Philadelphia's Yesterdays. With the shades of our forebears invisible but ever with us, let us stroll through the streets of Philadelphia. As we walk along, we will find ourselves becoming increasingly aware of the past, of the early period of our nation's heritage. We notice that many of the streets we cross have names such as Cherry, Spruce, Locust, and Chestnut. It was during William Penn's second visit to the city that he ordered the cross streets to be given the names of native trees.

Let's tour Independence National Historical Park, which lies close to the hotel area. Here, in Independence Hall, is the Liberty Bell, our favorite historical relic and the most prominent symbol of our freedom. We can touch the famous crack and read the words around the top of the bell: "Proclaim Liberty Throughout all the Land unto all the Inhabitants Thereof." Also in Independence Hall, in a fine Georgian room built for Pennsylvania's Provincial Assembly, the Continental Congress crowded to adopt Thomas Jefferson's Declaration of Independence. During the hectic days following the fighting in Lexington and Concord, the Second Continental Congress met in this same room to appoint George Washington commander-in-chief.

Right next door stands Congress Hall which was occupied by the Federal Congress from 1790 to 1800. Traveling east on Chestnut Street, we come to Carpenter's Hall where the first Continental Congress met in 1774.

A short walk takes us to Christ Church, built in 1727. A few of the persons who worshipped here were George and Martha Washington, John Adams, Benjamin Franklin, Robert Morris, and Lafayette. Two blocks away is the Christ Church Burial Ground where we see the graves of Franklin and his wife, Deborah.

At 239 Arch Street we come to the house where the first American flag was stitched by Betsy Ross—according to Betsy. Historians have not completely accepted her story in the absence of other proof. East and toward the river is Elfreth's Alley, a whole block of museum-piece houses which have been continuously occupied for two centuries.

If you are interested in seeing more of the architecture, elaborate furniture and interiors of nearly two hundred years ago, we can stroll to the Philadelphia Museum of Art. Or, we can visit Fairmount Park where we see these things in the city-owned colonial mansions along the Schuylkill River. Benedict Arnold bought one of these homes, Mount Pleasant, when he married a Philadelphia belle in 1779.

If fatigue does not deter you, countless other sights invite us. Among them are the University of Pennsylvania, the oldest university in the U. S.; the Port of Philadelphia; the U. S. Mint; and the largest steel plant in the world. We could drive out to Valley Forge or we could visit the quiet, peaceful world of the Amish people, which has no replica in any other section of the country.

Gray Line tours to all of these and other richly historical sites are conducted daily.

Alumnae Meals—Annual Meeting. The Alumnae Meals Committee will be pleased to make arrangements for mealtime reunions of college alumnae and dietetic internship groups. The reunions are scheduled as follows:

Tuesday evening, October 26: college alumnae
Wednesday breakfast, October 27: dietetic internships
Thursday evening, October 28: dietetic internships
Friday breakfast, October 29: college alumnae

The Committee urges that plans be made immediately so that reservations may be confirmed. The name of the group, its chairman, and the approximate number expected should be sent to:

Lillian Hack
Drexel Dormitory
3320 Powelton Avenue
Philadelphia, Pennsylvania

No reservations will be accepted after September 15, 1954.

Photo Contest Announcement Delayed. Because of an unforeseen delay in the judging of photographs, announcement of the winners in the Fourth Annual A.D.A. Photographic Contest is being postponed until the August issue of the JOURNAL. The first prize entry will be reproduced with the announcement.

Army Honors Two Dietitians. *Capt. Dorothy E. Fisher*, WMSC, U. S. Army, recently received the Army Commendation Ribbon with Metal Pendant for her services in Japan. Capt. Fisher has served 58 months in the Far East since World War II. She won the Commendation Ribbon for her work at the 382nd General Hospital, Kanaoka Barracks, Japan, from October 1951 to July 1953. She is now serving as Chief, Food Production and Service Branch, U. S. Army Hospital, Ft. Jackson, South Carolina.

Capt. Rosamond E. Hughes, WMSC, U. S. Army, was awarded the Bronze Star at a recent ceremony for her work as Chief Dietitian, Osaka Army Hospital, Japan. She is one of the few officers of the WMSC to receive this honor. Capt. Hughes was specifically cited for "displaying exceptional specialized ability, initiative, and conscientious effort in planning and preparing special diets for critically injured battle casualties" in support of the Korean action. She is now serving as Chief, Ward Food Service Branch, Walter Reed Army Hospital, Washington, D. C.

Dietitian Honored. Frances Voris Krone of Cincinnati received a two-year award in recognition of her public health work at the recent meeting of the Ohio Public Health Association in Columbus on May 24 and 25.

DuBois Scholarship for Kentucky. Announcement has been made of the ap-

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D-Zerta is now available in the dietetic section of grocery stores! Look for the new package containing 3 or 10 two-portion envelopes. Complete nutrition information, plus some exciting new recipes with every package!

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PERK UP YOUR PATIENTS WITH THIS LEMON FRUIT D-ZERTA

Dissolve 7 grams Lemon D-Zerta in 1 cup *hot* water. Chill. When slightly thickened, add:

2 tablespoons (30 grams) drained, pitted, quartered unsweetened cherries (red or light),

2 tablespoons (30 grams) drained, diced unsweetened pineapple (cooked or canned). Divide evenly to fill 2 molds or sherbets and chill until firm. Makes dessert or salad.

proval by the T. V. DuBois Foundation of a scholarship for dietetic interns to be administered by the Kentucky Dietetic Association. The award will be a grant-in-cash for a qualified student entering a dietetic internship. The first recipient of the Kentucky DuBois Scholarship is Karen Kercheval who is a graduate of the University of Kentucky.

Plentiful Foods MONTHLY LIST

Leading the list of plentiful foods for July, the U.S.D.A. has named ice cream, broilers, and fryers as "features." Other plentiful foods for the month will be:

Fruits and Vegetables
Locally-grown vegetables
Watermelon

Protein foods and fats

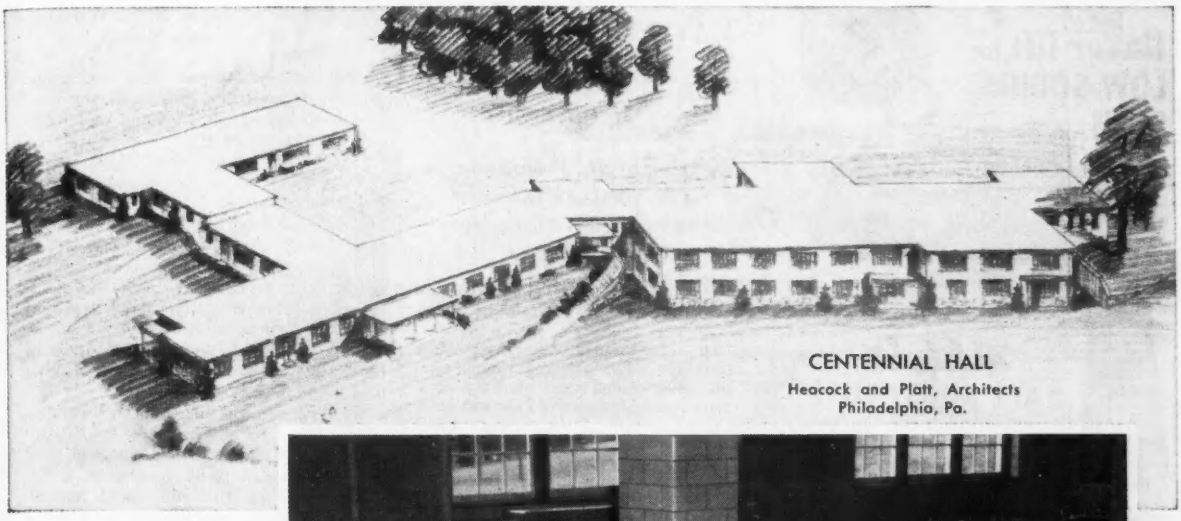
Beef	Peanuts and peanut butter
Fresh fish	
Milk and other dairy products	Turkeys
	Vegetable fats and oils

New Recommended Allowances. Issued in June was the official booklet outlining and explaining the new revisions of the Recommended Dietary Allowances of the Food and Nutrition Board, National Research Council. The changes which have been made were outlined in the February issue of the JOURNAL by Dr. Robert E. Shank. This new bulletin amplifies and discusses more fully the research on which the Board based its decisions, and a bibliography of 200 references classified according to nutrient is appended. The new bulletin is the National Academy of Sciences—National Research Council Publication No. 302, and may be obtained for 50 cents from the National Academy of Sciences, 2101 Constitution Avenue, Washington 25, D. C.

AHEA Publication Revised. A new edition of the well-known *Handbook of Food Preparation* has been released by the American Home Economics Association. The purpose of the book is to provide common, authentic terminology with reference to foods and food preparation. Accordingly, the subject matter is classified into seven major sections: weight and volume measurements of food materials; food buying guides; recipe construction; cooking timetables; definitions of foods, properties of foods, and quality and size grades.

In the food measurements section, such basic information as the weight of a cup of fat, flour, or sugar is given, as well as that of prepared foods, such as a cup of chopped Cheddar cheese, diced apples, or shelled nuts. The food buying guides provide data on the approximate number of servings per market unit in which the food is usually purchased. Approximate substitutions of one ingredient for another are also listed in case one wishes to use corn-starch instead of flour, baking soda for baking powder, and so on.

Copies may be ordered from the American Home Economics Association.



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Based on normal nutritional requirements for adults, the menu patterns, sample suppers, and pointers on meal planning have their place in any household. Practical ideas for making the work of the manager easier and pleasanter include a weekly marketing guide, hints for economy in buying and storage, and suggestions for serving.

This is a project of the Diet Therapy Section of The American Dietetic Association.

Single copy 50¢

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1600 Twentieth Street, N.W., Washington 9, D. C., for 50 cents each.

FAO Publications. Two other new publications of interest to dietitians have just been issued by the Food and Agriculture Organization.

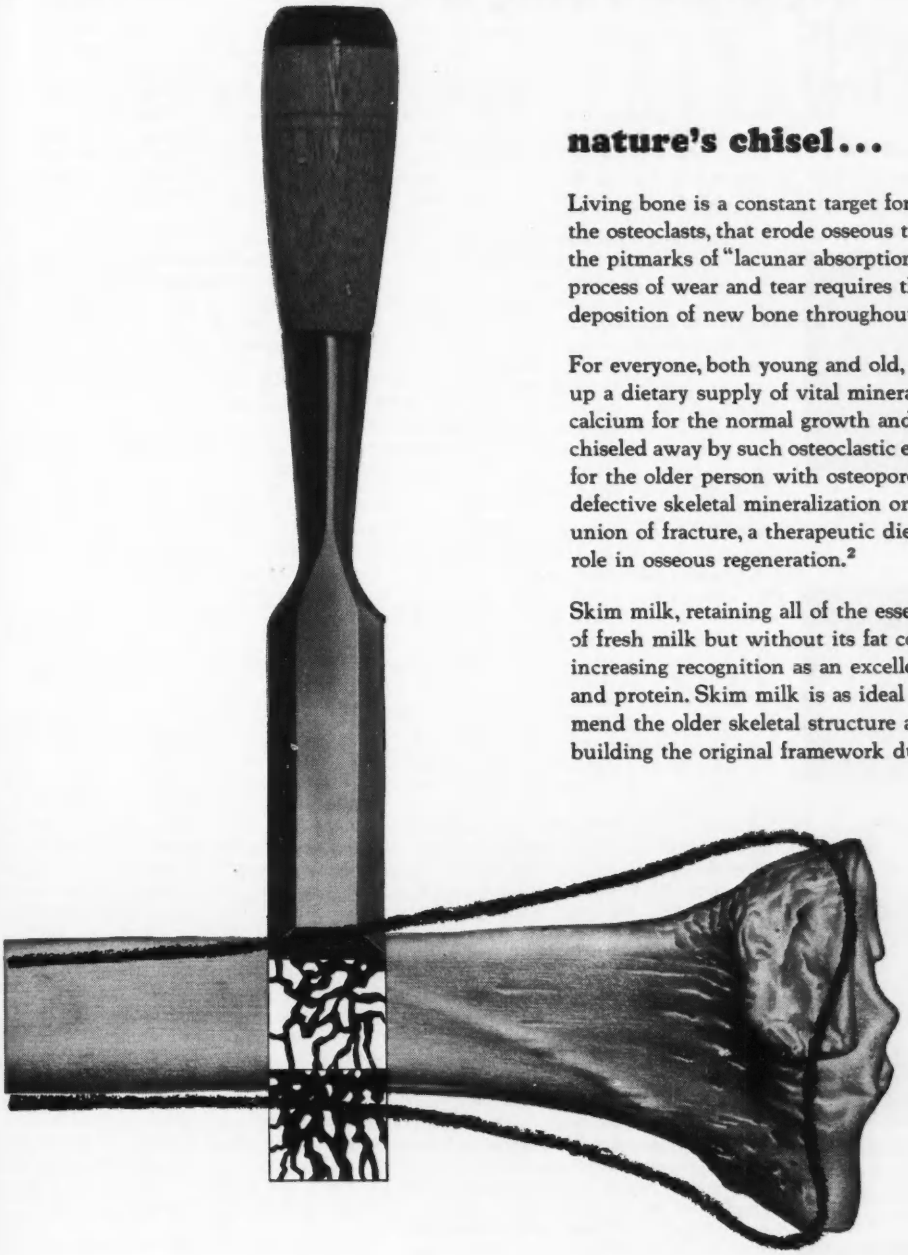
The first, titled *Food Composition Tables—Minerals and Vitamins—for International Use*, is No. 11 of the FAO Nutritional Studies. It is in sequence with the 1949 FAO book *Food Composition Tables for International Use* and gives figures for vitamin A, ascorbic acid, thiamine, riboflavin, niacin, calcium, and iron. The figures are presented for use in calculating nutritive value of diets in surveys of selected groups. Price of this publication is $1 per copy.

The second publication is *Rice Enrichment in the Philippines* by W. C. Aalsmeer, K. Mitra, I. A. Simpson, and N. Obando. In it is presented a recapitulation of the controlled experiment with rice enrichment for human beings conducted on Bataan Peninsula beginning in October, 1948. In February and March, 1952, FAO sent representatives to the Philippines to survey and report the results of this enrichment program in all of its aspects, including its administrative and economic aspects. The FAO committee in this report has weighed the advantages and disadvantages of the method of rice enrichment used in this experiment and sets them forth, pointing out that, although with this particular method enriched rice can be introduced into a community fairly rapidly, that it benefits the whole community, that it does not affect the flavor of the rice, and that the amount and kind of nutrients added can be controlled to some extent, a number of disadvantages would indicate that it is not necessarily the method to use in other countries. These disadvantages are listed, and further research is recommended. This report also costs $1 a copy.

Both publications may be obtained from the International Documents Service, Columbia University Press, 2960 Broadway, New York 27.

Government Publications. *Recipes for Quantity Service*, PA-238, is the April booklet of quantity recipes developed in the institutional recipe laboratories of the Human Nutrition Research Branch, U.S.D.A. Recipes have been tested for practicability, sales appeal, and consumer acceptance in commercial and other types of food service. This issue (the tenth and last of the Food Service Series) includes thirty-four recipes for soups, main dishes, vegetables, salads, salad dressing, breads, desserts, and cake filling and frosting. Measurements for quantities of 25, 50, and 100 portions are given. Copies may be obtained from the Office of Information, U.S. Department of Agriculture, Washington 25, D. C.

Job Guide for Medical Occupations is a new publication designed to help counselors in discussing job opportunities in the health and medical occupations. Issued by the U. S. Department of Labor, this pamphlet contains



nature's chisel...

Living bone is a constant target for the chemical chisels, the osteoclasts, that erode osseous tissues and leave the pitmarks of "lacunar absorption."[1] This continuous process of wear and tear requires the formation and deposition of new bone throughout every individual's life.

For everyone, both young and old, it is necessary to keep up a dietary supply of vital minerals, particularly calcium for the normal growth and replacement of bone chiseled away by such osteoclastic erosion. But especially for the older person with osteoporosis, for those with defective skeletal mineralization or with delayed union of fracture, a therapeutic diet plays an important role in osseous regeneration.[2]

Skim milk, retaining all of the essential mineral nutrients of fresh milk but without its fat content, is gaining increasing recognition as an excellent source of calcium and protein. Skim milk is as ideal in helping to mend the older skeletal structure as it is in building the original framework during younger years.

Like other Borden food products, Borden's Starlac Non-Fat Dry Milk and Borden's Non-Fat Fluid Skimmed Milk are of the highest quality and are processed under the most hygienic conditions. The fluid Skimmed Milk, for example, like all Borden milk products, is made from the finest of fresh milk, pasteurized and processed under the most modern, hygienic conditions for improved palatability and greater nutritive value.

With Starlac, Borden pioneered in making wholesome non-fat dry milk available to Americans everywhere. Both types of Borden's Non-Fat milk are economical, eminently suitable for use in the home and in the hospital.

Manufacturers and distributors of BORDEN'S Instant Coffee STARLAC non-fat dry milk • BORDEN'S Evaporated Milk • Fresh Milk • Ice Cream • Cheese • BREMIL powdered infant food • MULL-SOY hypoallergenic food • BIOLAC infant food • DRYCO infant food • KLIM powdered whole milk

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[1] Swenson, P. C., and Jeffery, R. B. : G. P. 7:34 [Feb.] 1953.
[2] Stieglitz, E. J. : Geriatric Medicine, ed. 2, Philadelphia, W. B. Saunders Company, 1949, p. 697.

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More than 1000 schools and hospitals all over the country are getting better service at greater savings with this line. How about you?

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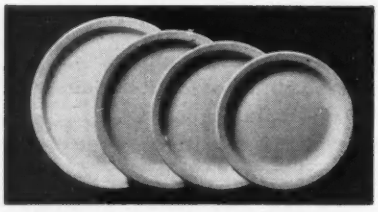
Heavy duty dinnerware of non-chipping Melamine plastic in beautiful pastel colors. Wide rim design.



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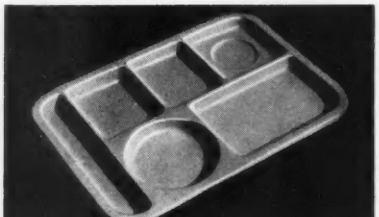
Top quality economy dinnerware. Sturdy, durable Melamine plastic. Light in weight; easy to handle.



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information on twenty-four medical and paramedical fields of work, most of which was obtained from the many professional organizations active in the health and medical fields and from the U. S. Public Health Service. Dietitians are included, of course, along with occupational therapists, physical therapists, and other paramedical workers. The pamphlet includes brief information on duties and responsibilities, entrance requirements and training, job opportunities, and sources of further information for each occupation. Since there is an urgent need for additional trained personnel for almost every medical activity, the booklet is being circulated through State Employment Security Agencies and other interested organizations. A limited supply of copies is available on request to the Bureau of Employment Security, Department of Labor, Washington 25, D. C.

Milk and Its Products—Facts for Consumer Education, by Irene H. Wolgamot and Lillian J. Fincher, has been released by the Home Economics Research Branch as publication AIB No. 125 of the U.S.D.A. In it, much information on the nutritive value of milk, amounts needed, and up-to-date facts on kinds of milk and dairy products on the market, along with other pointers on buying and use, have been brought together. Designed primarily for food writers, teachers, and other consumer educators, the booklet also may prove useful to consumers. Single copies are available free from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C. Copies in quantity may be purchased for 25 cents each from the Government Printing Office, Washington 25, D. C.

The School Lunch—Its Educational Contribution has been released by the U. S. Office of Education as Nutrition Education Series, Pamphlet No. 6. Widespread interest in the educational aspects of the school lunch program has resulted in a heavy demand for this publication which deals with the importance of the school lunch as a learning experience for boys and girls. The theme of the publication points out that the lunchroom may be a laboratory in which pupils learn the best ways of solving some of their basic problems in healthful living and citizenship. Topics discussed include: establishing good habits of food selection through the school lunch; the educational aspects of the school cafeteria or lunchroom, the noon lunch when teacher and pupils prepare a supplementary dish, and the packed lunch; and evaluating the educational aspects of the school lunch program. A three-page bibliography concludes the booklet, which is a revision of a 1944 pamphlet, "Making School Lunches Educational." Copies of the revision may be obtained for 25 cents each from the Governmen Printing Office, Washington 25, D. C.

"Studies on Sanitizing Methods for Use in Poultry Processing" is a report of five sanitizing methods and their effectiveness in decreasing bacteria on equipment and poultry during processing. The report covers a part of a research study directed toward the solution of technical problems under commercial plant operating conditions. The study was made by the Poultry Branch, Production and Marketing Administration, and has been issued as U.S.D.A. Circular No. 930. Copies may be purchased from the Government Printing Office, Washington 25, D. C., for 15 cents each.

Labeling of Low-Sodium Foods. The Food and Drug Administration has issued a tentative order concerning label statements relating to certain foods used as a means of regulating the intake of sodium in dietary management, as follows: If a food purports to be or is represented for special dietary use by man by reason of its use as a means of regulating the intake of sodium or salt (sodium chloride), the label shall bear a statement of the number of milligrams of sodium in 100 gm. of the food and a statement of the number of milligrams of sodium in an average serving of the food. The average serving shall be expressed in terms of a convenient unit or units of such food or unit of measure that can be readily understood and utilized by purchasers of such food. For example, an average serving might be expressed in terms of a number of slices, cookies, wafers, etc., or in terms of cupfuls, tablespoonfuls, teaspoonfuls, and so on.

Intern Graduation. In Hartford, Connecticut, six dietetic interns graduated on June 30 from the approved internship given by *Aetna Life Insurance Company*. They are: Ruth Freed, Pennsylvania State College; Nancy Keenan, Cornell University; Alice Lawrence, Iowa State College; Ellen Leary, St. Joseph's College; Mary Menard, University of Vermont; and Mary Ann Murnigham, Marywood College.

On the same date, June 30, *Mills College* in Oakland, California, held graduation exercises for five dietetic interns who have finished their year's work. They are: Shirley Buchanan, Lima, Ohio; Rachel Dubuc, Quebec, Canada; Doris Mauk, Oakland, California; Ann Murphy, Oakland, California; and Rose Samperisi, Cleveland.

Institute of Food Technologists. Dr. L. E. Clifcorn, Director of the Fundamental Research Division, Continental Can Company, Inc., has been elected the 1955–56 President-Elect of the Institute of Food Technologists. Dr. Clifcorn is noted for the development of stabilization of iodine in iodized sale. He has also contributed significantly to many improvements in methods of processing canned foods. He is well known as the author and co-author of numerous publications in the field of food and nutrition, some of which have appeared in this JOURNAL, and is currently on the editorial advisory board of the *Journal of Agriculture and Food Chemistry*.

Meetings. The *American Public Health Association* has set October 11 to 15 as the dates for its 82nd annual meet-

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INSIDE SCIENCE

The Vital Story of VITAMIN C

by Science Writer

What does vitamin C do for human beings?

Medical research shows that it is essential in maintaining healthy bony tissue and for the formation of collagen which is the main supportive protein of skin, tendon, bone, cartilage and connective tissue. It is needed for vascular function and tissue respiration and in promoting the healing of wounds. In lactating women it has great importance in providing the infant with a sufficient amount of ascorbic acid to prevent scurvy, a disease to which very young babies are susceptible.

Much evidence is available in medical reports to show that a lack of this vital nutritive element can result in impaired health. And in those cases of frank scurvy which still occur, ascorbic acid is the specific medication.

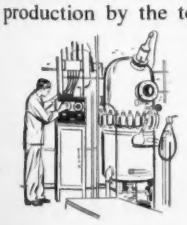
History. The history of vitamin C is fascinating. Scurvy, known for centuries, was once the most prevalent disease in Europe. It afflicted the Crusaders, decimated the crews of voyagers and armies, and plagued the colonists of the New World. In the 18th Century the antiscorbutic value of fresh vegetables and citrus fruits was recognized.

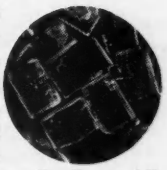
Isolation. It was not until 1918-25 that almost pure ascorbic acid was concentrated from the lemon by Zilva and its important properties and molecular composition established. In 1927 he concluded that this so-called "reducing factor" and the antiscorbutic principle were closely related. In 1928, Szent-Györgyi, who started investigations in 1921, isolated a strong reducing compound from adrenal glands, oranges, and cabbage and termed it "hexuronic acid."

Chemistry. The "reducing factor," "hexuronic acid," and vitamin C were all identified as the same in 1932 by various groups of workers. This was one year after C. G. King, by methods of organic chemistry and experimental physiology, established the chemical identification of vitamin C, thus fulfilling Budd's prediction of 90 years earlier that the antiscorbutic property of certain foods would ultimately be discovered to be a definite substance.

Synthesis. In 1933 Reichstein and his colleagues in Switzerland successfully synthesized ascorbic acid. Almost simultaneously in England Haworth and associates accomplished the same. The Reichstein synthesis formed the basis for large scale commercial production by the world-famous firm of Hoffmann-La Roche.

Production. Following these discoveries came the establishment of manufacturing operations so that today daily production by the tons is the rule. The figures are really staggering. The amount produced weekly in the U. S. A. averages over 15 tons, equivalent to that contained in over 200 million oranges. It is remarkable that ascorbic acid can be produced synthetically and sold for only about $21. per kilogram. One kilo is sufficient to supply 92 people for one year with the minimum daily requirements set by the U. S. Food and Drug Administration.





Vitamin C made by the Roche process is identical chemically and in biological activity with Nature's own product. Because vitamins can be manufactured at a much lower cost than if they were extracted from natural sources they are widely used in dietary supplements and pharmaceuticals. In fact, "New and Non-official Remedies," a publication of the American Medical Association for use by physicians states: "All pure ascorbic acid used in pharmaceutical products is prepared synthetically."

Ascorbic acid is present in many foods. Nature supplies some with lavish amounts and stints on others. In fact, wide variations* have been found in the vitamin C content in varieties of the same fruit.

Deficiencies. Many surveys have shown widespread vitamin C deficiencies in the population. Physicians may call these subclinical, but they are deficiencies nevertheless.

Because of these situations—natural variation and widespread deficiencies—diet experts believe that it is desirable and in the public interest to standardize the vitamin C content of processed fruit and vegetable juices by the addition of enough pure crystalline ascorbic acid to make them consistently dependable sources of this necessary food element. Some of these juices are: tomato, grape, orange, grapefruit, pineapple and apple.

Requirements. The U. S. Food & Drug Administration has set 30 milligrams as the adult minimum daily requirement of ascorbic acid. This daily intake is just about sufficient to prevent recognizable signs of vitamin C deficiencies although a subclinical or an unrecognized deficiency may exist. In view of this, the National Research Council has established 75 milligrams as the recommended daily male adult allowance and 70 mg. daily for female adults, which levels are supported by many controlled nutrition studies. However, the N. R. C. recommends 90 mg. daily for boys between 13 and 15, 100 mg. daily for boys between 16 and 20, and 150 mg. daily for lactating women.

This article is published in the interests of pharmaceutical manufacturers and food processors who make their good products better with essential, health-giving vitamin C. Reprints are freely available. Vitamin Division, Hoffmann-La Roche Inc., Nutley 10, New Jersey. In Canada: Hoffmann-La Roche Ltd., 286 St. Paul Street, West; Montreal, Quebec.

*The table shows minimum and maximum levels of ascorbic acid in commercially canned juices. All figures are in milligrams per 100 grams of juice. Data from U. S. Department of Agriculture.

	Min.	*Max.*
Apple juice	0.2	3.6
Grape juice	0.0	4.7
Grapefruit juice	10.0	49.0
Orange juice	9.7	70.0
Pineapple juice	5.4	18.0
Tomato Juice	2.5	32.0

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ing to be held in the Memorial Auditorium, Buffalo.

The 31st annual convention of the *National Society for Crippled Children and Adults* will be held Nov. 3 to 5 at the Hotel Statler, Boston.

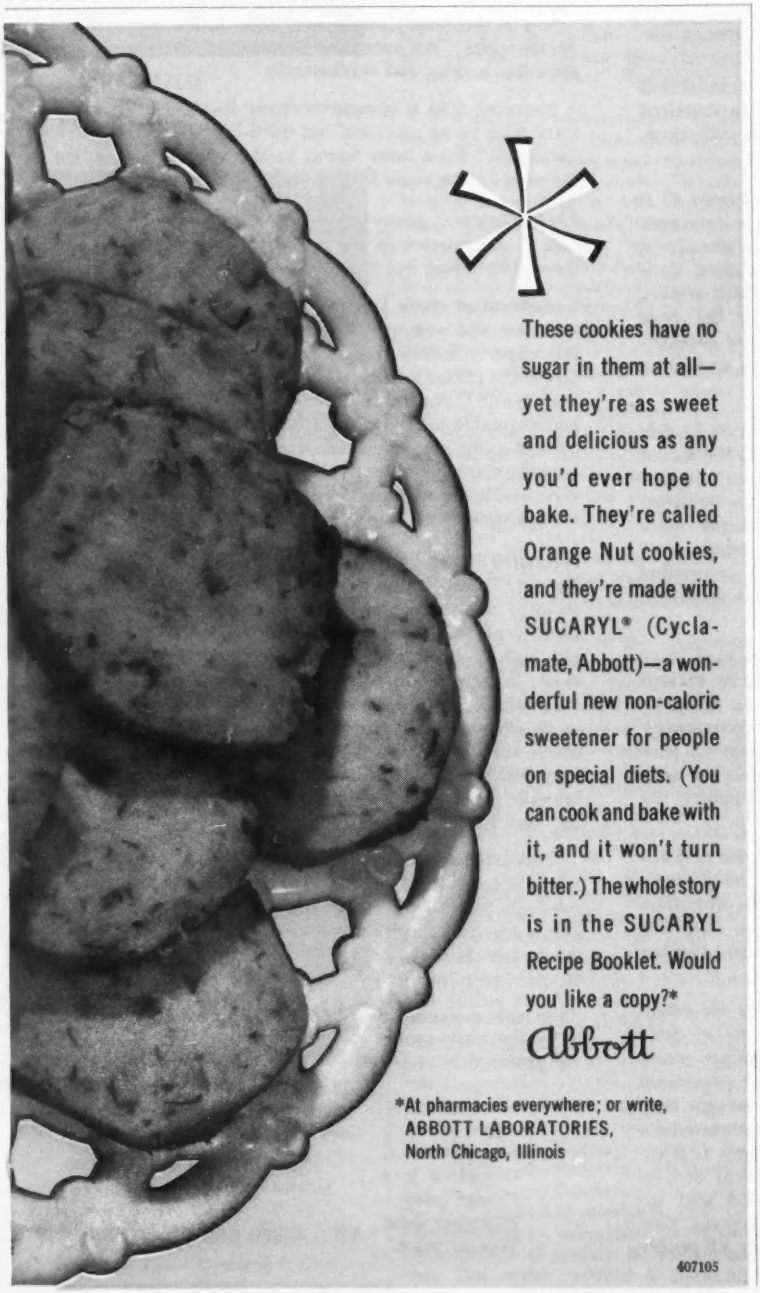
Films on Child Feeding. The Michigan Department of Health has announced that a series of five film strips and five short, silent movies—both series in color—on child feeding have just been added to its film library. The pictures illustrate the information included in the Department's child feeding leaflets.

In addition to their use in well-child conferences, it is suggested these films would be useful in staff education programs of local health departments, high school classes in home and family life education, and baby sitting classes.

A limited number of the film strip series will be made available on a long-term loan basis to health departments and teaching centers. The movies are available on a preview and limited loan basis. The films may also be purchased. Further information may be obtained from Visual Education Section, Michigan Department of Health, Lansing.

WHO Assembly. At Geneva, May 5, the seventh World Health Assembly elected as President, Dr. Joseph Nagbe Togba, Director of Public Health and Sanitation of Liberia.

The Director-General, in the course of the Assembly, presented his report of the work of WHO in 1953—a review of some 330 public health projects in which the Organization is giving cooperation in 74 of the 84 member countries. The 1953 projects included 27 to reduce communicable diseases, primarily malaria, tuberculosis, and treponematoses (syphilis, yaws, and others); projects for the strengthening of national health administration, particularly in the field of environmental sanitation, maternal and child health, nursing and social work, and occupational medicine; and in the organization of professional and technical education and training.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Gussie Tabb King. Word has been received by A.D.A. of the death of Gussie Tabb King in Milledgeville, Georgia, on January 20. Mrs. King was a graduate of Georgia State College for Women and since 1917 had been a member of the College's home economics faculty. She had been a member of A.D.A. for twenty years.

Helen Kite. Notice has been received from the California Dietetic Association of the passing of Helen Kite of San Diego on April 27. Mrs. Kite had been an A.D.A. member since 1930, having formerly been connected with the Millard Fillmore Hospital, Buffalo. During the war she served as consulting dietitian in the Medical Department, Consolidated Vultee Aircraft Corporation, San Diego.

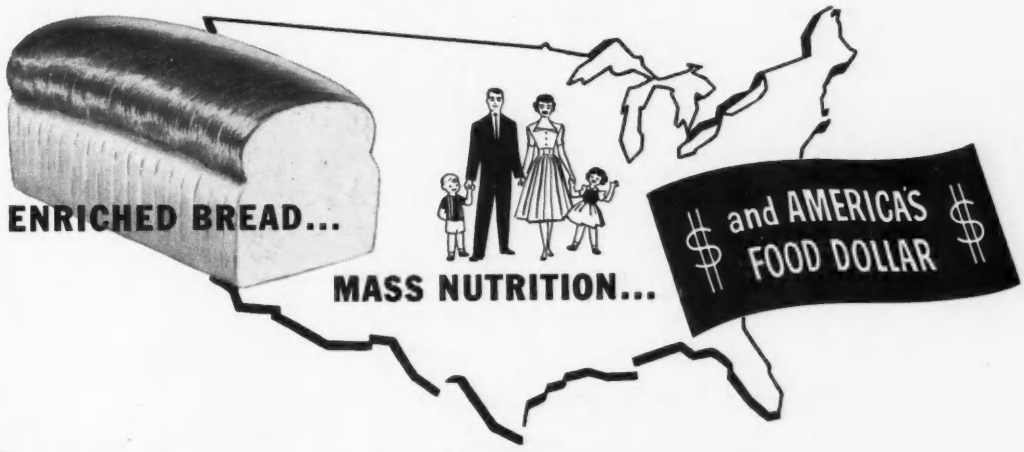
Sarah Rogers Cook. The A.D.A. office has been notified of the death on May 8 of Sarah Rogers Cook, who was employed at the Cook County Hospital, Chicago. Mrs. Cook was a graduate of Alabama State College and of the Eastman Kodak Company's approved dietetic approved dietetic internship.

News of State Associations

Arizona Dietetic Association. The following officers were elected by the *Central Arizona Section* (Phoenix) of the Arizona Dietetic Association at its meeting on April 8: President, Dorothy Bradfield; President-Elect, Virginia Felch; and Secretary-Treasurer, Helen B. McIver.

California Dietetic Association. In May, the *Los Angeles Region* met at St. Francis Hospital, Lynwood, and were conducted through the new kitchen which was recently given recognition through a Merit Award in the 1954 *Institutions Magazine* contest. Dr. John O. Westwater, Moore-White Clinic, spoke on "Obesity and Liver Disease."

In May, the *Sacramento Region* met at the University of California, Davis, to hear a discussion of "Development of Techniques for Food Preference Testing" by the head of the Food Technology Department. . . During High School Career Week in Sacramento, the television station KCCC showed spot recruiting announcements on dietetics,



THE nationwide average retail price of 5½ ounces of enriched bread (the estimated average daily consumption) is approximately 5.8 cents.[3] This small fraction of America's food dollar has been responsible for notable gains in mass nutrition and health.[2] The National Research Council and the American Medical Association's Council on Foods and Nutrition have recently reaffirmed their endorsement of the enrichment of bread in the light of "good evidence that enriched bread has been beneficial to the public."[1]

Column I of the appended table shows the amounts of nutrients and nutrient energy provided by 5½ ounces of enriched bread. Column II of the table gives the percentages of the recommended daily dietary allowance[4] available from this amount of enriched bread.

It is evident that enriched bread furnishes substantially more than its share of most nutrients. Thus it compensates for deficiencies of these nutrients in other foods of the everyday diet. Since virtually all enriched bread is made with nonfat milk solids, its protein—containing an average of 10.5 per cent milk protein and 89.5 per cent wheat and yeast proteins[5]—functions for growth as well as tissue maintenance.

Enriched bread might well be considered a basic food in maintaining the high nutritional status of the American people, yet it can be purchased for so small a percentage of the American food dollar.

CONTRIBUTION OF 5½ OUNCES OF ENRICHED BREAD...

	Nutrients and Calories	Percentages of Allowances (1953)[4]
Protein	13.2 Gm.	20%
Thiamine	0.37 mg.	26%
Niacin	3.4 mg.	24%
Riboflavin	0.23 mg.	14%
Iron	4.1 mg.	34%
Calcium (average)	137 mg.	17%
Calories	418	14%

1. Council on Foods and Nutrition, American Medical Association: A Statement of General Policy Concerning the Addition of Specific Nutrients to Foods, J.A.M.A. *154*:145 (Jan. 9) 1954.
2. Sebrell, W.H.: Trends and Needs in Nutrition, J.A.M.A. *152*.42 (May 2) 1953.
3. Bureau of Labor Statistics, United States Department of Labor, Jan., 1954.
4. Shank, R.E.: Revisions of the Recommended Dietary Allowances, J. Am. Dietet. A. *30*:105 (Feb.) 1954.
5. Sherman, H.C.: Chemistry of Food and Nutrition, ed. 8, New York, The Macmillan Co., 1952, pp. 212, 599.

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including two of the A.D.A. Kodachrome slides.

Colorado Dietetic Association. The *Southern Colorado Dietetic Association* recently presented a program on "Color Dynamics." R. B. Williams, Pittsburgh Plate Glass Company, Colorado Springs, was the featured speaker. He pointed out that color can be used to provide a more comfortable and pleasing environment for patients and thus aid in convalescence, and that the proper use of color in a hospital enhances confidence in the institution and promotes good will among patients and visitors.

Indiana Dietetic Association. The following officers for 1954–55 were elected by the Indiana Dietetic Association at its spring meeting: President, Dr. Cecilia Schuck, Purdue University, Lafayette; President-Elect, Martha McBride, Indiana University, Bloomington; Secretary, Jeanne Larson, Larue Carter Hospital, Indianapolis; and Treasurer, Florence Adrian, Indiana Board of Health, Indianapolis.

Iowa Dietetic Association. The spring meeting of the Iowa Dietetic Association was held in Des Moines. In the morning a panel discussion was presented on "Iowa's Program for Weight Control." In the afternoon, the program included "Management Aspects of School Lunch Programs in Iowa" by Dr. Beatrice Donaldson; "Highlights of the Restaurant Sanitation Program in Des Moines" by John Rand; and "Responsibilities of an Army Dietitian in Japan" by Mary Lipscomb.

The following officers for 1954–55 were elected; President, Shirley Wilkins, Children's Hospital, Iowa City; President-Elect, Helen Lovell, Iowa Department of Health, Des Moines; and Secretary, Doris Hittle, Ames.

Louisiana Dietetic Association. The spring meeting of the Louisiana Dietetic Association was held in Baton Rouge. Included on the program were talks by Dr. Daniel Broth, Comptroller of Louisiana State University, who spoke on the value of good cost accounting procedures, and by Gladys Hall and Dr. Mary K. Bloetjes, both of Florida State University. At the second day's luncheon, Sister Euphemia, Chief Dietitian, U. S. Public Health Hospital, Carville, reported on her travels in Ecuador.

The Louisiana Dietetic Association's Award of Merit was presented to Louis Michaelis, a graduate of Louisiana State University, who is planning to take a dietetic internship at The Ohio State University.

Michigan Dietetic Association. A new local dietetic association has been formed in *Flint, Michigan*, with Mary Jane Ford, Chief Dietitian, Women's Hospital, as President.

•

Minnesota Dietetic Association. The Minnesota Dietetic Association's spring meeting took place on May 13 in St. Paul. The program included the following papers and discussions:

"Looking at a Dietitian's Job Objectively"—Harriet Warmington Swan, VA Center, Ft. Snelling

"Present-Day Trends in Frozen Foods"—a panel discussion led by T. Grant Raitt, Manager, Frozen Foods Department, Aslesen Company Minneapolis

"New Developments in Mixes"—Arthur Grawert, District Supervisor of Bakery Sales, Pillsbury Mills, Minneapolis

"Some Uses of Group Dynamics in Dietetic Teaching"—Dr. Knight Aldrich, Associate Professor of Psychiatry, University of Minnesota

"Lessons in Good Guidance"—Agnes M. Larson, Supervisor of Home Economics, St. Paul Department of Education

At the luncheon two awards were given. Mable Hu, St. Scholastica College, Duluth, became the recipient of a $100 scholarship to use during her dietetic internship. Patrica Letson, Glen Wood, Minnesota, was named the Minnesota dietitian who has done most for vocational guidance in the state this year, and received a $15 prize for the essay she wrote describing her activities.

New York State Dietetic Association. The following officers for 1954–55 were elected by the New York State Dietetic Association at its spring meeting in Albany: President-Elect, Winifred

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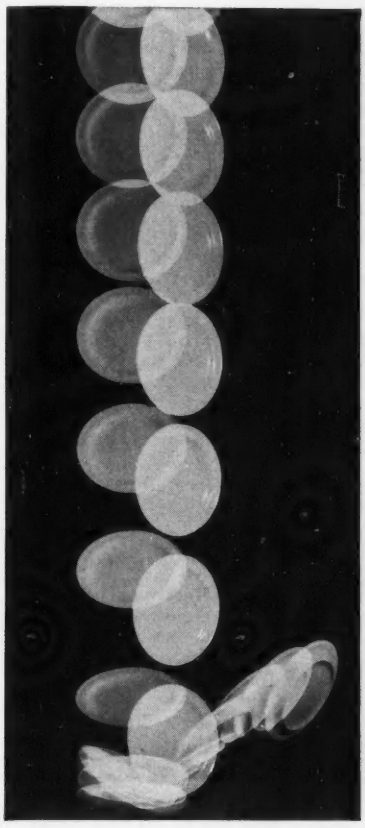

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Bouvet, Vassar Brothers Hospital, Poughkeepsie; and Secretary, Ann D. DiLaura, Erie County Department of Health, Buffalo. The following officers, elected a year ago, will also serve the New York Association during the coming year: President, A. June Bricker, Metropolitan Life Insurance Company, New York City; and Treasurer, Elizabeth C. Casey, Solvay.

Ohio Dietetic Association. The *Cleveland Dietetic Association* has had an active year in civil defense work, with Margaret Walsh of the Cleveland Welfare Federation serving as chairman of the activity. Dietitians have been assigned to various schools which are designated to be auxiliary hospitals in the event of disaster. Using the "Auxiliary Hospital Feeding Manual" as a guide, they have trained food service volunteers from P.T.A. groups in these schools. In May, dietitians conducted a class in outdoor cooking, and in June, they held a "cook out" to instruct the P.T.A. volunteers in this type of food production.

Texas Dietetic Association. Members of the *Dallas Dietetic Association* are serving as group leaders in a weight reducing program sponsored by the Dallas Health Society. Ten groups of eighteen people each are meeting for 1 hr. a week for sixteen weeks. Each group is headed by a dietitian who serves as the group leader, watches to be certain that no misinformation is given, acts as general consultant, and helps with program planning and evaluation. A physician visits each meeting to answer medical questions.

The May program of the *San Antonio Dietetic Association* featured talks by two Army dietitians stationed at Brooke Army Hospital. Capt. Barbara Kennan reported on her experiences in feeding the returned prisoners of war at Freedom Village in Korea, and 2nd Lt. Shirley Peterson, a dietetic intern, presented a case history of a Brooke patient from the dietitian's viewpoint.

Washington State Dietetic Association. Two spring meetings were held by the *Seattle Dietetic Association*. At the first, a paper by Dr. James E. Stroh on "Food Allergies" was presented; at the second, Mary Northrop reported on "Harborview's New Kitchen." Her talk was followed by a tour of this new facility.

Association Activities

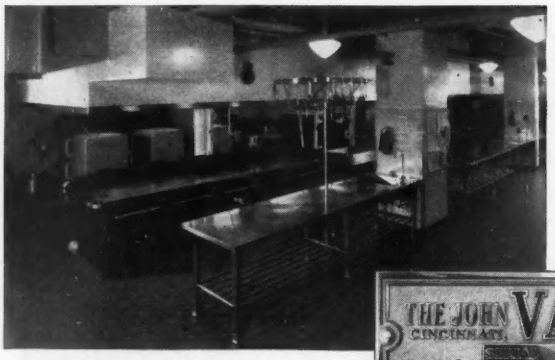
A.H.A.—A.D.A. Meeting. The Joint Committee of the American Hospital Association and our Association met in Chicago on Thursday, June 3. Cora Kusner, Chairman of the Joint Committee, Winifred Erickson, and Millie Kalsem were A.D.A. representatives. Doris Odle, Fern Gleiser, Wilma Robinson, Thelma Pollen, and Ruth Yakel also attended. Subjects of common interest were discussed, including the promotion of the shared dietitian as having potentialities in meeting the needs of small hospitals which cannot obtain the services of a full-time dietitian. The report of the A.D.A. committee on the food service supervisor was discussed and reviewed.

"Answer to a Dilemma—The Shared Dietitian," an article by Thelma Pollen, appeared in the May issue of *Hospitals*. This article will be of interest to administrators of small hospitals and to experienced dietitians interested in this new field. Mrs. Pollen is also preparing an article for the September issue of the JOURNAL on this same subject.

Canadian Dietetic Association. The annual meeting of the Canadian Dietetic Association was held in Halifax, Nova Scotia, June 8 to 10. Regina Frisbie served as A.D.A.'s official representative and took greetings from our President.

International Relations. The Conference on the Home Economist in Expanding Programs of International Service was held in New York City, May 10 to 12. Esther Atkinson acted as our official representative. General sessions were held, as well as conference work groups. Miss Atkinson participated in the group concerned with "How can we provide effective experiences for visiting professional workers and other leaders."

Exhibits. The *National Conference of Social work* was held in Atlantic City, May 9 to 14. Reizel Herschfield cooperated in arranging for New Jersey



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members to man the exhibit, "Eating Is Fun." Assisting throughout the week was Belle Y. Grohs, representing the Greater New York Dietetic Association.

The 39th annual convention of the *Catholic Hospital Association* met in Atlantic City, May 17 to 20. Margaret Madden and Evelyn Carpenter of Philadelphia were in charge of our exhibit, "Eating Is Fun." Pennsylvania members assisted in manning the booth.

The *Illinois State Medical Society* held its 114th annual meeting in Chicago, May 18 to 21. Arla Jacobson was in charge of the A.D.A. exhibit, "Adequate Low-Calorie Diet with Adaptations." Other members of the Chicago Dietetic Association cooperated.

"Eating Is Fun" was also displayed at the *Middle Atlantic Hospital Assembly*, May 26 to 28, in Atlantic City. Irma Walker, Chairman, and other New Jersey members assisted at the exhibit.

"To Administrators of Small Hospitals," featuring the shared dietitian, was the A.D.A. exhibit shown at the *Minnesota Dietetic Association* meeting May 13 and 14 in St. Paul. Melvina Larson was Chairman of the display.

"Achieve Your Proper Weight and Keep It" was shown at the *Public Health Conference* in St. Paul, June 2 to 4, with Margaret Dayton as chairman.

"Eating Is Fun" was exhibited at Lake Placid, New York, for the 50th *Annual Health Conference of Public Health Workers*, June 7 to 10. Mabel Creighton was in charge of the exhibit.

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News of Products and Services

At the National Restaurant Association convention in May, *H. J. Heinz Company* announced that it will sponsor a five-year program of recruitment for the restaurant industry in behalf of the N.R.A. The program will be directed to high school students and will be planned to interest young people in all types of food service work. Training on the job and part-time employment are being encouraged to help young people learn of opportunities in the industry. In addition, the nation-wide education program will be worked out to make parents aware of the industry's opportunities. A vocational counselling package will be made available for classroom work in the schools. The kit will contain a career booklet for the counsellor, a leaflet for the student, and a booklet describing a color slide film that has been prepared as a visual presentation of the industry to students. In addition, a Heinz scholarship program will also be launched to help outstanding students receive professional training. Local restaurateurs will support the program with open houses for students and by talking with groups of prospective restaurant workers.

Institutions Magazine is sponsoring a new decorating contest which will run until September 15. The purpose of the contest is to promote official recognition of outstanding decoration in the mass-housing, mass-feeding field. Entries may be made by any institution—hotel, school, hospital, restaurant, public building, or other organization dealing with mass-feeding or mass-housing. One requirement for all entries is that the decoration or redecoration must have been completed between January 1953 and the closing date of the competition. Four classifications of entries will be made: general inside public areas, dining areas, private inside areas, and sleeping areas. Some twelve equal awards will be made, recognizing both the institution and the designer or decorator. Details of entry specifications may be obtained from the Furnishings Editor, *Institutions* Magazine.

The Dietene Company has recently worked with the University of California Medical Center in developing three tube feeding formulas for use in postoperative feedings. It is believed they will help to eliminate diarrhea during the immediate post-operative period. Worked out with the help of a physician and a dietitian, these tube feeding formulas, which feature Meritene, have been published in folder form and are available on request from the company.

S. Blickman, Inc., has devised a rack carrier to reduce the handling of glasses in the employees' cafeteria of a New England manufacturer. Blickman Sani-Stack glass racks are rolled from the dishwashing machine to a space between the water coolers on a carrier which accommodates ten racks at a time, or a total of 360 glasses. One rack is

"A SAINTPAULIA IONANTHA? FOR ME?"

The card accompanying the African violets said, "Hope you like this Saintpaulia ionantha." The signature told me the rest. It was from the patient who used to be in 706, Mrs. Olgivie. The one that loved gardening so much.

The day Mrs. Olgivie arrived she was quite distressed over the fact that she had to go on a low-calorie diet. Especially since she was fond of salads and desserts. But her attitude changed. Thanks to saccharin, I could make every meal a balanced meal and not worry about upsetting her diet balance.

The day Mrs. Olgivie left, she told me how the tempting, tasty dishes we had prepared pleased her. And when I gave her a booklet with 70 saccharin recipes, she was *really* tickled. "My dear," she said, "I'll send you a Saintpaulia ionantha, for all your help." I didn't know then what it was, but I do now.

Send for this FREE Recipe Book—"Enjoy the Sweet Things of Life"—it contains 70 tempting low-calorie recipes.

Handy for patients . . . step-by-step recipe instructions make this book ideal for use by outpatients on low-calorie diets. Order in quantity.

Look at the special features of this unusual recipe book—the only one of its kind. Send for the number of FREE copies you need.

Written for dietitians by graduate dietitians.

Includes salad dressings, pies, muffins, beverages, cupcakes, cookies, puddings, whipped toppings, custards • 43 pages of recipes • Calorie count given with every recipe • Every recipe approved by taste panel.

MONSANTO

SERVING INDUSTRY WHICH SERVES MANKIND

Organic Chemicals Division
MONSANTO CHEMICAL COMPANY
Box 478, Dept. G
St. Louis 1, Missouri

Please send me copies of your saccharin recipe booklet.

Name.....*Title*.....

Business Address.....

Street.....

City.....*Zone*....*State*.....

placed so that glasses can be easily withdrawn by cafeteria customers, and as it becomes empty, another is shifted into place.

The Vollrath Company has introduced a line of new, stainless steel cooking utensils which feature an alloy, heat-conductor bottom for even heating. The line includes stock pots, double boilers, a Windsor sauce pan set, and fry pans. Each comes in a variety of sizes.

A new, one-piece, flat-bottom, decorated water cup is the latest introduction into the line of *Lily-Tulip Cup Corporation's* products. The 3-oz. cup, which is produced by a new manufacturing process, has a sturdy flat bottom, a tightly rolled rim for smooth drinking, and a specially-treated dry-wax surface which make it suitable for use with fruit juices and other beverages and as a sampling cup, as well as a water cup. It is available in the stock green leaf design or in a one-color special print. It operates from pull-type dispensers.

Robertshaw-Fulton Controls Company is offering a new model Unitrol gas water heater control, called the "Unitrol Model 102." The new control features an attractive gold color and newly-designed control dial and is suitable for all gases. It combines a thermo-magnetic automatic pilot unit which insures complete shut-off protection in the event of gas failure, a snap action thermostat, and a large capacity gascock. Corrosion-resistant red brass and copper are used for parts immersed in water.

Save Labor* and Space
...Reduce Glass Breakage**
with
MODERN Sani-Stack® RACKS

*because manual handling is cut up to 71% **as much as 50% savings in breakage

More and more leading establishments are finding Sani-Stack racks the solution to their dishwashing problems. They've found that Sani-Stacks quickly pay for themselves many times over in faster, more efficient dish handling service. They point to the sturdy, open wire construction that facilitates fast and thorough washing, rinsing and drying of china, silver and glassware. And the rigid, electrically welded frame that assures years of usage. They're available in sizes to fit every washing machine. Write today for full information.

For more than 20 years sold through better restaurant equipment dealers everywhere

Metropolitan WIRE GOODS CORPORATION
70 Washington Street, Brooklyn 1, N. Y.

Cans manufactured by the *American Can Company* now make it possible for filberts to be vacuum packed. One nut-growing organization is making these vacuum-packed nuts available in four flavors: mint, cinnamon, smoked, and French toasted.

American Can Company is also conducting a national advertising and promotion program to broaden the use of canned foods and help homemakers with their meal planning. As part of this promotional campaign, the company exhibited a canned chicken recipe at the recent chicken and allied foods festival of the Poultry and Egg National Board in New York.

Metropolitan Wire Goods Corp. is now marketing a closed-handle whip. The handle is hermetically sealed with pure block tin to prevent liquids or food particles from entering. Both the rigid French whip and the flexible piano-wire whips are available with the closed handle.

Another new product of *Metropolitan Wire Goods Corp.* is a special basket for washing the 10 by 14 in. plastic compartment tray used in the school lunch program. Made for use in immersion dishwashing machines and sinks, the basket features a plastisol-coated tray holder which keeps trays at the best angle for washing and protects them from markings which result from contact with the metal basket.

S. & R. Soda Fountain Manufacturing Company is seasonably producing a 42 by 28 in., covered relish stand. It boasts two sauerkraut pots with electric burners, a napkin stand, and three condiment pots which are covered with hinged, sanitary, thumb-grip covers for easy lifting.

The Eastern Regional Office of the *National Dairy Council* has announced the employment of Betty Totland Lunstead as Nutrition Consultant for the Greater New York program of the Dairy Council. Mrs. Lunstead was formerly on the dietetic staff of Montefiore Hospital, New York City.

The Fleischmann Division of *Standard Brands Incorporated* has opened a new laboratory in Stamford, Connecticut, which will have as its functions to: keep uniformly high the quality of food products now being manufactured; develop new food products to make both institutional and household food preparation even easier; and improve the processing of foods to the benefit of both the manufacturer and the consumer. Products which will be handled in the new laboratory will include: yeast in several forms, baking powder, coffee and frozen coffee concentrate, tea, cocoa, frozen eggs, frozen fruits, margarine, shortening, salad dressing, bouillon, gelatin and gelatin desserts, and instant puddings. There will be eight divisions: cereal chemistry, fermentation, product service, biochemistry, organic chemistry, and bio-organic chemistry, as well as a commercial bakery and a pilot plant. In one laboratory, "field quality control" work will be done to be sure the quality of Standard Brands products remain uniformly high after leaving the manufacturer's hands for distribution.